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-SELF SUFFICIENCY AND PLANET CARE-

EARTH GARDEN

—FOR BUSH OR CITY ALTERNATIVES—

- Termite house spray breakthrough!
- Zapping the microwave oven
- Homemade summer drinks
- Jackie French's organic gardening column
- Farming worms in WA
- Bushfire protection
- Ghostbusting phantom power loads
- Recycled rare timbers
- Life on a tropical verandah
- EARTH GARDEN REVIEWS
- Earth People Write and much more . . .

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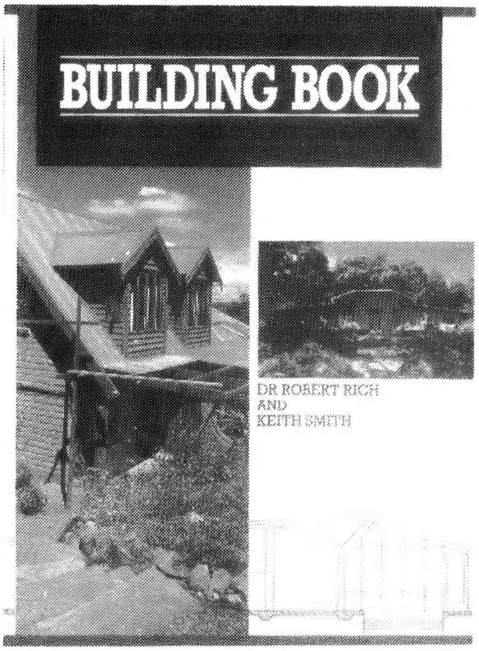
EARTH GARDEN BOOKS

Order form on page 56



EARTH GARDEN BUILDING BOOK

Design and build your own house

Dr Robert Rich and Keith Smith

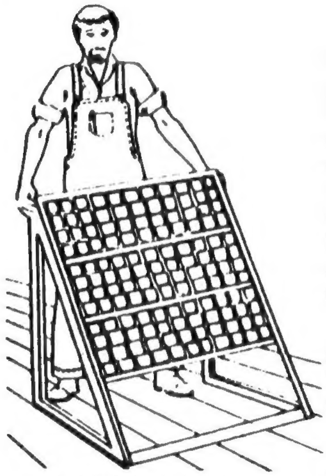
Nelson, 1987, 315 pages, illustrated, large format paperback.

This is the book many people have been waiting for since they first dreamt of building their own home from natural materials in harmony with their surroundings. It answers all the questions for Australian owner-builders. It's a 'practical book for dreamers' and it faces the difficult subjects square on. What the authors have done is show how anyone of average intelligence and reasonable health can build their own home, and probably not end up with a 25 year mortgage at the end of it all.

"This book is intended to provide an antidote to the stereotyped Australian suburban sprawl of red brick houses with red tile roofs, set squarely in a rectangle of ground," said authors Bob Rich, and former Earth Garden publisher and editor, Keith Smith.

EARTH GARDEN BINDERS TO PROTECT YOUR COLLECTION

These sturdy magazine binders have been produced to protect your collection of Earth Gardens. Each binder snugly holds 12 copies of Earth Garden and prevents tears, dog ears and bent pages. They're tough, and they look attractive on your bookshelf with the Earth Garden name and logo stamped in gold foil on the spine and cover. See page 56 to order.



ENERGY WORKS!

Home Energy Systems

By Keith Smith

Nelson, Melbourne, 1985, large format paperback, 211 pages, illustrated. ☐ $19.95 posted.

Why spend the rest of your life paying someone else for your electricity? Here's how to plug in the renewable energy of the sun, wind or water using an efficient 12V or 240V solar electric system, wind generator or water turbine. Run lights, radio, TV, computers, tools and appliances wherever you live.

"The major part of this book is devoted to practical issues, hardware and actual installations.

". . . This book should appeal to anyone wth an interest in the supply of energy to weekenders, farms or other remote dwellings or even to the suburban household." — Dr C. J. L. Cornish of Murdoch University, WA, in *APACE WA Newletter*.

A new, revised editon of The Hard Times [illegible] ow available. As we enter the last decade of [illegible] ntieth Century major changes in Australia's economic an[illegible] ocial life are taking place. Unemployment, inflation and high interest rates continue to make times hard, no matter what our personal situation. The book includes over 180 practical household tips, over 150 recipes for cheap, healthy meals, how to make your own supplies, grow your own food and be prepared for emergencies. The German edition of this book sold like hotcakes! See page 56 to order. $13 posted.

—SELF SUFFICIENCY AND PLANET CARE—

EARTH GARDEN

—FOR BUSH OR CITY ALTERNATIVES—

— Number 74 —

December '90 - February '91

• FRONT COVER: Taking a break from working in the corn patch in northern NSW. The sub-tropical climate means the corn cobs will be ripe well before those of southern Earth Gardeners. The story on this 'no-till' corn patch, by Leigh Davison, will appear in the next issue. • BACK COVER: 'The Earth Gardener's Companion' is selling like hot cakes. See page 56 to order this, the latest book published by Earth Garden. • This month's tree tax will go to the ACF's Cape York Peninsula Fighting Fund.

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Founded by Keith & Irene Smith, 1972.

Editor: Alan Thomas.
Secretary: Karen Sandow.
Book Review Editor: Sophie Masson
Illustrator: Bronwyn Halls.

EARTH GARDEN is Australia's original journal of self-sufficiency and alternatives. It is intended as a forum of practical ideas, shared knowledge, sources and to point towards alternatives to unfulfilling consumerist lifestyles.

It's about putting a roof over your head, growing your own food organically, aiming for appropriate, renewable home energy systems, and surviving - and thriving - in the city or the bush, with the inner changes which follow when you're in harmony with Nature.

Each issue we donate a portion of the cover price to a community group involved in tree planting or forest conservation projects to help balance the use of the partly recycled paper used for printing Earth Garden. We would like to see all publishers pay a tree tax.

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Contributions to EARTH GARDEN are welcome — sharing information and experiences with other readers strengthens the network of Earth Gardeners.

Photos, illustrations and diagrams are important when sending us contributions.

Subscribers are sustainers — for subscription details see page 56.

We welcome advertisements appropriate to the aims and ideals of EARTH GARDEN, but reserve the right to refuse ads at our discretion. Write to us for display rates.

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Dear readers,

Welcome to the summer edition of Earth Garden. One of the obvious changes with this edition is the increase in the cover price. I hope we can hold the new cover price for a long time as we've usually managed to do. It's a difficult decision when increasing the cover price, but thank goodness I've only had to do it twice in four years as Editor, whereas Keith & Irene had to go through the agony a fair few times from 1972 till 1986.

The festive season is upon us and many families are experiencing hard times. Australia's economic outlook is bleak, especially if you live in Victoria or Tasmania. Many people will be looking for ways to economise and the wise words of Keith & Irene in 'The Hard Times Handbook' are as relevant today as when the book was first published during the recession of the early '80s. Our economy seems so fragile, and the simple pleasures of a few chooks and a home vegie garden seem even more comforting in such times.

Unfortunately, the book has proved so popular this year that the new edition has been reprinted and has sold out twice. The publishers are currently considering another reprinting but we are unlikely to have stocks for orders after the end of January. If you want to order the book after January you may have to make do with the Hard Times edition of Earth Garden, EG 37, until we get fresh stocks of the book.

This month's edition has some fascinating articles by writers with some of Australia's best sources of information on such subjects as organic gardening, owner-building, alternative energy and sustainable lifestyles.

One article crammed full of facts and statistics is about the ecological destruction caused by the livestock industry. Although the figures are American, their application to Australia is obvious. It is unusual for Earth Garden to publish an article so heavily weighted towards a 'strict' code of values such as, in this case, vegetarianism. It is becoming clearer however, that the livestock industry is an issue not just for those people interested in animal rights. It is also a huge environmental issue. One of the challenges in discussing these issues is to do so in a positive way — to encourage each other by example, rather than feeling guilty and powerless to effect real change.

One thing I find offensive is the "Holier than thou" attitude of a small number of fellow environmentalists ("How Green Is My Conscience"). Competitive environmentalism (a la — "Oh, so you still buy non-organic food sometimes?") can degenerate into a superior form of trendy snobbery, which makes people more divided than united. A superior environmental attitude towards our fellow beings is no more compassionate or enlightened than many of the ratrace values to which Earth Gardeners are creating alternatives.

"Think globally — act locally" is a wonderful saying which seems to have more meaning the longer you ponder it. I used to think that lasting change is achieved by us all striving to become as superhuman and committed as people like Martin Luther King or Dr Bob Brown. These days I strongly believe that, as much as being united in mass action, it's through each of us taking measures on an individual level that we can help improve the world. There aren't many people around like Mahatma Gandhi or Nelson Mandela, but we can work towards a cleaner, happier, safer world starting with our own homes and families.

Some people seem comforted being able to preach that recycling your waste newspaper (for example on the garden as mulch) is a tiny ineffectual step compared to the massive forest destruction from Tasmania to the Amazon, and that the only real way to effect change is not by wasting your time on a little petty recycling, but by becoming a full-time volunteer crusader. The facts are that not many people are cut out to be full-time volunteer crusaders — thank goodness some are, but the rest of us can be very effective in supporting such campaigns by starting in our own backyard.

I think there's a difference between the "personal" and the "political" when it comes to improving the world. I'm yet to meet anyone who lives the perfect, no-impact environmentally-sound lifestyle. If we're heading in the right direction towards a more environmentally-sustainable lifestyle, let's direct our energies to our media or Government about improving car fuel efficiencies, rather than hassling our neighbour (publicly or privately) for running a six-cylinder car instead of a four. Let's keep the 'agitation' on a political level, rather than a personal one, if for no other reason than because our gas-guzzling neighbours can find some major or minor flaw in *our* lifestyle if they look closely enough.

The French philosopher Jean-Paul Sartre believed that humans are condemned by the nature of our existence to a life of freely-chosen (not pre-determined or directed) actions. We are free to choose to strive towards a more sustainable lifestyle, and if we choose that path, we should recognise that it takes a long time to effect lasting (not fashionable or short term) change. We should be pleased and encouraged by our progress — not divided by our differences or disheartened by how much more there is to achieve.

So . . . let's get mulching — it's hot and windy out there! Happy reading and best wishes for the festive season and 1991,

Alan.

WE WERE WRONG

In EG 73 in the article on page 8 about the Survivor wind turbine, we mistakenly suggested that the Rainbow Power Company had designed and manufactured the turbine. In fact, the Survivor was designed and manufactured by W D Moore & Company, of Perth. We apologise for this mistake.

Letters to Earth Garden are always very welcome.

Bright prospects in Gympie

Dear Earth Garden,

We began reading Earth Garden about 40 issues ago and have always been interested in the philosophy it reflects. We have lived in outer suburban Brisbane, we've lived in the middle of a cane paddock on Queensland's tropical coast, in a small coastal country town and on Queensland's Central Highlands amidst cotton farms and coal mines. All the while we have dreamed of some day buying a block of land and trying to put at least some of the Earth Garden philosophy into practice. Unfortunately my employment with the education department and the logic (or lack of) of the transfer system kept our dream as just that.

Earlier this year, however, after what must have been a particularly depressing day I searched the 'positions vacant' columns and found a job I was suited for in Gympie, a town we thought would be perfect for realising our dream. I bid farewell to the Education Department and within a week of arriving in Gympie we had sold our house and bought seven acres of bush just eight minutes drive from town. Blocks here are still reasonably priced and surprisingly well serviced. Where we have bought there is power (no guarantee), phone, bitumen road, school bus past the front gate and water supplied to each block from a local water scheme, all for $24,500. We consider that to be excellent value.

We are not intending to 'get back to basics' or be totally self-sufficient. The convenience and comfort of industrial technology are far too ingrained in our lifestyles for that. We are, however, being thoughtful about the impact we will have on our immediate environment and will be sensitive to the needs of the natural inhabitants of our block. We will also continue to read Earth Garden as a guide to ways of modifying our activities to minimise the effect on the environment. Yours faithfully,

Cam, Jan, Jack, Tom and Joe Wright, Gympie, Qld.

Inner peace, and Earth Gardening

Dear Earth Garden,

I have just bought and read my first Earth Garden and I can't believe how long I've been missing out on this great magazine. Since becoming a first time mum eight months ago, my goals in life have changed dramatically. I can't believe how ignorant I have been regarding the Greenhouse Effect, healthy living and especially chemical-free food. I have since commenced growing my first vegie garden (organic of course) and the excitement I felt when I saw the first tomatoes and corn cobs appear was something I will always treasure. I am starting to feel an inner peace, knowing that I am doing my best to provide my family with a healthy lifestyle and hopefully a healthier world to live in. Earth Garden will keep me informed and inspired. Thanking you,

Diane Mill, Beenleigh, Qld.

The value of subscribing

Dear Earth Garden,

I have purchased Earth Garden for many years from time to time from newsagents but sometimes I have been too short of money or I have forgotten to look for it. Nowadays local newsagencies are unable to tell me when they expect a delivery and are generally unhelpful.

As I have recently retired I have even greater need for your helpful and informative publication. Yours faithfully,

Miss J K Trevanion, Waikiki, WA.

Some newsagents have no idea which magazines they stock. The best way to get EG reliably is to subscribe directly. Many people have been surprised when I've mentioned this in the past, but subscribing helps to keep EG healthy because we do not lose half the cover price in distribution costs.

—Alan.

Young Earth Gardener

Dear Earth Garden,

I discovered your wonderful magazine last month — it's great! I am 16 years old and a keen gardener. I enjoy all sections of Earth Garden, especially segments involving organic vegetable growing as I have a large prospering patch that is chemical free. I live in outer Sydney and am interested in real rural living. Anyone from country areas willing to write and tell me about their way of life will be replied to in haste.

A special hello to Judith Finley of Balston! Keep up the fantastic work.

Rebecca Matthews, 4 Edwards Rd, Middle Dural, NSW, 2158.

Dear Mr Thomas,

Thank you for your lovely recycled envelope. Since my article ap-

peared in Earth Garden 71 the response has been enormous. I have made so many new friends and their letters are full of questions. Yours sincerely,
Mrs Marjorie Bligh, Devonport, Tasmania.

Older seed can still be a good bet

Dear Alan, Camille and Tane,

Let's here it for the stale seeds. Jackie French urges us to use fresh seed but my father, who had a garden that kept the family in fresh vegies, invariably kept his seed two seasons before using it. Yes it did result in some dud seed but those that did sprout produced plants practically free from disease.

In fact to the best of my recollection his garden tools did not include a spray of any kind. He harvested his seed from his own garden, and seed from hardy stock would in turn have a greater late viability rate. He had a poor opinion of me as a gardener and was a devout double digger. He would be most interested to see plants grown in 'no-dig' gardens. They taught gardening at the school he went to — I was educated elsewhere. It is no good asking him for his recollections, he went to that great big garden in the sky in 1964. RIP. Yours truly,
John E Guest, Rockhampton, Qld.

White tomato seed?

Dear Earth Garden,

I would like to hear from any readers who have vegie seed to swap. Non-hybrid seeds please. We are looking for a large white tomato seed. We have some but the tomato turned out yellow. I am also interested in any old time flowers or lilies. Yours forever gardening,
Marj Ebert, C/- Post Office, Tiaro, Qld, 4650.

Earthworm booklet availability

Dear Earth Garden,

Some information that may be of use regarding earthworms: I got my copy of the CSIRO booklet 'Earthworms — For Gardeners and Fishermen' (reviewed in a back issue of Earth Garden) from Sydney Worm Supplies, 1 Clanville Rd, Roseville, 2069.

Myself, I am chasing the address of what used to be Vita Publications, or any information on books showing how to build a hydraulic ram for water pumping. Also, does anyone know of Australian outlets for Yurt drawings? Many thanks,
Bruce Eckart, 273 Auckland St, Gladstone, Qld, 4680.

Cape tulip control?

Dear Earth Garden readers,

Can anyone offer advice on dealing with Cape tulips, the poisonous plants which grow from a bulb with a long green leaf and an orange flower? Last spring we dug up thousands of bulbs by hand and disposed of them. This year the infestation seems worse. We would prefer not to use chemicals. Has any reader any experience to offer? If so I'd be grateful for an answer to the address below. Best wishes,
Adrienne Emmerson, Lot 53 Reen Rd, Gidgegannup, WA, 5666.

Blue Mountains EG builders

Dear Earth Garden,

I'd like to hear from readers with expertise/experience in building energy-efficient rural houses suitable for the Blue Mountains climate and environment. In particular, I'd like to hear from Blue Mountains Earth Garden readers who are also builders. I'm also interested in hearing from anyone who has built using railway sleepers for external walls or who has a useful experience to share about commercially produced mudbricks. Wisdom-of-hindsight experiences are just as welcome as success stories. **Jan Craney, 4 Darling St, Glebe, NSW, 2037.**

Owner-building assistance wanted

Dear EG readers,

Is there anyone out there who can be of assistance? My wife and I are seeking information on a self-build home which we plan to build in stone. We are going to build on land we own at Moogerah, which is some 100 km south of Brisbane. Commencement is not for two years yet, but there is a great deal to do in preparation.

Of the many books we have on stone building it is unclear as to how one can improve thermal insulation. How easy is it to install insulation? Could a compressed mud wall be used to line the inside of the stone to any benefit?

Wishing to incorporate passive solar heating, we need a design that includes a solarium-cum-greenhouse/bathroom — one that will blend in with the building and not seem an addition. Could anyone offer a suitable plan? We could also make use of a rise in the ground to the south, to partly bank the soil on that side, but what is the method of weather-proofing stone on the outside?

Finally if a raft concrete slab is employed, that is, poured after the foundation wall has reached floor level, I understand that a 25 mm barrier such as cannite has to be left between the slab and the inner wall — does this not introduce an entrance for moisture? These are only some of the basic questions I know, and we are sure only a small portion of the many to come, but with a design decided on, we would feel at least that we are off the ground. Thank you in anticipation,
Robert and Helen Barker, 17 Columbia St, Chapel Hill, Brisbane, 4069.

Dear Earth Garden,

Just bought ourselves 100 acres of Paradise! Escaped Brisbane, Hooray!
KR & PM Proud, Birkdale, QLD.

Home education groups

Dear Sir/Madam,

I am writing to you in the hope that one of your readers may be able to help me. I believe there is a "Home Teaching Support Group" in New South Wales (Sydney I think) offering information, advice and support to parents wishing to teach their children at home.

If anyone can give me the name

of the group or a contact phone number I would be very grateful. If not, even any ideas about who I could contact to trace the group would be greatly appreciated. Thanking you in anticipation,
Diane Allen, c/- Nicholson Post Office, Nicholson, Victoria, 3882.

Bug trapping materials

Fellow gardeners,

I am seeking a supply of something sticky to paint on boards to catch insects in the garden. This spring, sap sucking Rutherglen bugs have plagued and destroyed all flowering seeding plants. I notice they are attracted to the colour white and some glucky substance, such as the stuff on fly papers, would perhaps do the job. Thank you,
Lorraine Blaney, Wallace Rd, Beachmere, Qld, 4510.

From Queensland to Thailand

Dear Alan & Camille,

Thank you for our first issue by subscription. In the past we've bought EG from the newsagent. We have been EG readers from our early Melbourne days when our eldest son André introduced an issue to the house. Now the whole family, somewhat spread around the globe, are keen earth people. Incidentally, our subscription is for André — we airmail his with other goodies to Koh Samui in Thailand.

Now, we are moving much closer to the 'real source' with 40 acres of timber and scrub. There's not a great deal of water, though we are surrounded by creeks and rivers at Baffle Creek, via Rosedale. We are developing a keen attachment to this arid sunburnt backwater and thanks to you, and other subscribers to your priceless magazine, we believe we can make a go of becoming true earth people — the signs are encouraging. Keep up the good work and the tree tax. Sincerely,
Jan & Anny Allen, Bundaberg, Qld.

New reader in Aotearoa

Dear Alan,

Found your delightful publication while having a brief holiday in Australia. EG 73 has arrived and has been read from cover to cover. Can't wait to get hold of other copies. Keep up the good work. Kind regards,
Margaret Hamlin, Palmerston North, New Zealand.

Dear Earth Garden,

Thanks for an inspirational magazine. We are only new readers of your magazine which I found, by luck, at our library. I'm sick and tired of hearing about chemicals to fix this and poisons to stop that. We all know what a mess this has got the world into. Let's give Nature a go! Anyway, I was reading an old copy and found you get more out of it if we buy direct from you. So, well done, and here is our subscription cheque. The tree tax is a great idea. Keep up the great work,
Rhonda and John Jardine, Chapel Hill, Qld.

Government organic produce regulations

Dear Earth Garden and all concerned readers,

With the growing awareness among the general public of the organic movement there is an increased demand for organically grown fruit and vegetables. People are starting to see the benefits of organically grown produce.

Unfortunately, governments — being what they are — are trying to legislate and control the production of organic produce. The recent media publicity over finding chemical residues in supposedly organic vegetables has had a damaging effect on the organic movement. The Federal Government wishes to legislate strict guidelines for the production of organic vegetables which would mean anyone wishing to sell produce under an organic label would need to be certified by one of the larger organic organisations in Australia.

But what about the small growers, working away diligently growing their vegetables in true organic fashion, who cannot afford the rather expensive certification costs. They will no longer, under proposed Government legislation, be able to sell their produce as organic.

Frightening isn't it? Big Brother strikes again. The Kyogle Organic Growers' Association (near Nimbin on the north coast of New South Wales) is a rather fanatical bunch of 30 or so small growers who have a very strict code of ethics and are doing the right thing organically and who wish to do something about this Government problem.

We would like to hear from any concerned organic groups throughout Australia regarding forming a collective voice to let the Government know how we feel regarding this new legislation. We don't want governments telling us what to do. Anyone interested should write to:
George Schoneveld, PO Box 496, Kyogle, NSW, 2474.

Guide to chemical testing?

Dear Camille & Alan,

I am interested in purchasing land outside Brisbane to establish an organic garden. I would like a guide on what chemicals have been used where, before I make the decision on where to purchase. Are you aware of any publication that may help? I enjoy reading your magazine. Yours sincerely,
Catherine Shooter, PO Box 154, Tennant Creek, NT, 0861.

Setting out an octagonal house

Dear Earth Garden staff,

I enjoy your magazine and appreciate the effort of all. I thought I'd jot down a few notes on polygon (including octagonal) houses. There is a simple way for owner-builders to set out a polygon house, suitable for using traditional or natural building materials. It's as easy in fact as square or rectangular style houses, and just as suitable for barns and sheds.

Scribe a circle about the desired size using a centre stake, marking diameters, then bisecting all four quadrants at 45 degrees. Put markers (stakes) at all eight points. Check the spacing as these mark the positions for roof support piers.

Normal footings are laid directly point to point, making eight short simple walls in which door frames are placed wherever they're desired, including those for later extensions if decided, such as a glasshouse, workshop, guest house, laundry and bathroom.

A suspended timber floor on brick or log stumps with ant caps can be laid in one direction or pavers can be used. An open plan saves cash, labour and space otherwise wasted by doors and walls. Screens and built-ins with night/day divans allow furnishing flexibility. A large double glass wall to catch the winter sun, and several narrow, full length windows may give enough light.

A span over 8 metres (26 feet) would need a 'centre' support such as a fireplace with drying cupboard or a bar, or a 3/4 dividing wall for art display.

A traditional hip or gable roof would be no better than a five degree sloping, reinforced, flat, concrete slab which could support a roof garden. If the roof's level, another floor or mezzanine (for hot areas if cash available) would be attractive — even a cathedral roof. Another variation is two half-domes with a solar array, tank and windmill if desired, with solar vents and six double-glazed windows. Please feel free to contact, criticise, and swap ideas.

Art Stoker, 54 Lombard St, Fairfield West, NSW, 2165.

Yes, we're still going strong

Dear Sir/Madam,

I recently came across a March 1988 edition of Earth Garden. I'm ashamed to admit that I'm not familiar with this wonderful publication, however, if you are still going strong I will definitely be subscribing.

Helen Ferguson, Warrimoo, NSW.

Dear Sir/Madam,

Thank you for a most interesting and informative magazine. Like most readers I would like it more often, but I *do* understand, there are only 24 hours in a day aren't there? (Been there done that!). You can only do so much, so keep up the good work. Yours faithfully,

EA (Ted) Franklin, Tarpeena, SA.

Dear Earth People,

Just like to let you know that the inspirational value in your magazines and books is enormous! You've helped us to really get creative with our lifestyle. We feel like we're in good company. Keep up the good work and God bless.

Ani and Arnie Wierenga, Kingston, Tasmania.

Loony deadlines!

Dear EG,

Great mag. Please start publishing fortnightly. If unable, twice a lunar month would be fine. I find it's time to right (write) things and subscribe. Yours with best wishes,

Robin Kellet-Willis, Kensington, Victoria.

Australian tipi maker?

Dear Alan,

I read with interest your article on tipis. Is there a tipi (commercial) maker in Australia? I'd like about half a dozen, heavy duty, for a camp, big enough to sleep at least three people in comfort. Keep up the good work. Regards,

Garry Walsh, 23 Verdoni St, Bellara, Queensland, 4507.

Dear Earth Garden,

I have just taken advantage of your special two-for-one offer and found a magazine which offers help to the extremely needy. My husband and I have a dream of owning some land we can use to raise our three (so far) children in the healthiest happiest way, with good fresh organically home grown vegies, open space, and all the things the phrase 'country living' conjures up in the imagination of a city family.

We have found a house with a decent but not too big block which we are renting to make sure we can cope with a lifestyle change before we decide to buy our own. I'm proud to announce that we are all adapting with enthusiasm and are glad that we made our decision. The biggest problem we've faced is the lack of knowhow to carry out the dreams . . . and that's where you come in. Please send me your wonderful magazine and when finances make it possible I will be collecting the back issues. This is going to make life so much easier than collecting bits and pieces of information here, there and everywhere. I'll have information at my fingertips.

Yours thankfully, Vicki McKay, Jindivick, Victoria.

Dear Alan & Camille,

Hi! Thank you for a fantastic magazine. I hang out for the next issue just days after I finish the last one. Thanks also to every Earth Garden reader who writes in. The letters and experiences are helpful and inspiring and give me hope whenever I'm feeling down. The stories and other information are great too.

I would like to let other Earth Gardeners know of a small but very helpful book from the Australian Conservation Foundation called *The Green Cleaner* by Barbara Lord. It is an excellent book and should be in everyone's kitchen. I found it in the ABC Bookshop in Darwin recently but I'm sure it would be in most bookshops.

Thanks again for a great magazine, and I hope other readers may have some ideas they could share, like the quick-papermaking 'recipe' below, to help reduce the waste in our society.

Paper Making

- Large plastic basin
- Wooden frames, A5 or A4-with waterproof joints and strong nylon net stapled taut to frames
- One extra frame of the same size without netting
- Newspaper.

1. Fill the basin with pulp to just below the rim.
2. Place the empty frame over the net frame, hold together and dip vertically into the basin. Tilt to horizontal below the water and raise slowly, keeping the frame horizontal.
3. Lay on newspaper to drain. Remove the empty top from, scatter on petals or leaves for decoration and leave the pulp to dry.
4. When completely dry, slide a palette

knife under the sheet to loosen it from the frame.

Clean the frame and reuse following the same process.
Jenny Robertson, Esperance, Western Australia.

New planting territory

Dear Earth Garden,

Please send me your other books as soon as possible — I can't wait! I've already got hold of *The Earth Gardener's Companion*, which left me bleary-eyed because I couldn't put it down. I only hope the other organic gardening books have more information on closer planting — it's a scary idea after years of religiously following seed packets! **Cathy Cox, Glengowrie, SA.**

— GROW ORGANIC '91 —

ON THE long weekend of 26 to 28 January 1991, the East Gippsland Organic Agriculture Association is holding its fifth annual 'Grow Organic' seminar. GROW ORGANIC '91 will be held at the Ontos farm retreat near Buchan in East Gippsland.

Topics will include organic goat husbandry, apple orcharding, Heritage apple growing, whole farm planning, organic control of weeds and pests on farms and in the garden, and beginning in organics. The program will include great speakers, workshops, farm visits and time for informal discussions.

Seminar speakers

Speakers will include Jackie French, who is well known to Earth Gardeners through her regular column and many articles on organic pest control and natural farming and gardening techniques. Jackie is the author of many books and is a regular on ABC talkback in Canberra as well as having a regular segment on Channel 10's 'Till 10' show (national). Jackie assures us that, like her writing, she won't run out of topics to discuss.

Bruce Hedge is an organic orchardist from Gisborne, Victoria. Bruce is developing a property on Keyline and permaculture lines. He is specialising in Heritage varieties of fruits and those which are disease resistant and more suitable for organic production.

Krishna Yogi, Proprietor of Ontos farm, will speak of his experience in setting up Ontos, and farm tour of Ontos are part of the programme.

Allen Gilbert is a consultant for the Department of Agriculture and Rural Affairs. He is the author of numerous articles on organics. Allen is a plant propagation and pruning specialist, having devised a special fruit tree pruning technique to aid the organic orchardist.

Frank Hirst is an extension officer with the Department of Agriculture and Rural Affairs, Victoria. He will highlight the importance of whole farm planning and the place of agroforestry in a successful and efficient farming enterprise.

Wally Porter is well known to organic farmers and gardeners in East Gippsland. He is the Founder of the East Gippsland Organic Agriculture Association. He will be conducting workshops for those just beginning in organics.

Reub Fisher an organic beef farmer. He has specialised in the use of mineral fertilisers, organic soil improvement and the Keyline system of farming.

Robyn Grant is a long time organic farmer and gardener with particular concern for the extensive use of chemicals in agriculture.

Ontos is a 300 hectare NASAA, A grade certified farm. Farming enterprises include a 400 goat herd and 10 hectares of fruit orchards, including apples, stone fruits, kiwi fruits and citrus. An extensive vegetable garden supplies the retreat's catering needs. Ontos offers camping facilities, cabins and motel style accommodation.

This is an opportunity for farmers and gardeners to increase their knowledge on organic food production methods, and for a friendly and informal gathering of interested people GROW ORGANIC '91 is well worth attending. There will be children's programmes and an organic book stall.

For further information contact: Bill Hankin (051) 550227, or Audrey Porter (051) 575210, or write to: EGOAA, PO Box 1263, Bairnsdale, Victoria, 3875.

Farming worms in WA

The value of earthworms has long been recognised by organic gardeners. New enterprises like 'Albany Organics' in Western Australia are finding wider markets these days as broadacre farmers begin to realise their value as well. The reintroduction of earthworms to low-fertility soil on New Zealand farms has resulted in increased pasture productivity of between 10 and 72 percent, according to Pauline Mele, of Victoria's Rutherglen Research Institute.

by Anne Simpson

Denmark, Western Australia.

WHEN John and Kaye Embleton escaped the pressures of city life over two years ago to live in the country, their first concern was how best to use their attractive rural retreat. They left Perth, and secure jobs, to move closer to family and adopt a new direction in their life near the south coast town of Albany in Western Australia.

Their initial intention was to produce organically grown vegetables and supply a burgeoning market for 'clean' food. The Shire of Albany did not support this plan but was willing to consider, with some trepidation, the Embleton's proposal to establish an earthworm farm on their Little Grove property.

The concept of earthworm culture was completely new to the local government authority and an Environmental Protection Authority assessment was required before it was deemed an appropriate line of business. Regular inspections were also a condition of approval. Three months later the couple were given permission to set up the ultimate in environmentally friendly ventures — Albany Organics. Two years down the track the demand for Nature's most efficient and underrated cultivator of the soil is growing rapidly and business is flourishing.

As far as John and Kaye are concerned, earthworms are the essential component in organic cultivation and are integrally linked to many recycling practices with far-reaching benefits for the grower and wider environment.

"We are ordinary people who enjoy the benefits of modern technology but also have a deep concern for the environment and the appalling waste of reusable resources in society," says Kaye Embleton.

The couple launched their vermicology project with two small worm beds near the house, while John did as much reading and research as possible. He also visited other earthworm farms in the State for first-hand advice, because much of the available literature was American and of very little relevance to conditions in Albany.

They bought breeding stock from operating earthworm farms — mainly red and tiger worms, which are believed to have originated from Europe with the early settlers.

Albany Organics now has four large earthworm beds which contain about 750,000 worms. John can harvest up to 50 kg of worms every three months from each bed or culture unit and under ideal conditions 1000 prolific breeders will multiply to one million in a year.

He buys pig manure from a nearby farm and composts it, along with shredded newspaper, for the earthworm bedding. Black plastic or pieces of old carpet cover the beds and the worms are also fed with household scraps, decaying plants and other organic materials.

Recycling is a key element of the Embletons' activities and they have strong views on the need for people to be a little more thoughtful and take time to separate household rubbish instead of dumping it all together in "those awful big green bins".

"We always try to buy things which can be re-used or which have recyclable containers. This reduces the need to burn rubbish which further pollutes the atmosphere," Kaye said.

The Embletons' winter/spring vegetable patch is a stunning testimony to successful organic cultivation, with all its aspects of composting and commitment to hard work. Succulent asparagus, cauliflowers, cabbages and potatoes, to mention just a few, are thriving in the 'no-dig' garden.

The patch has been built up six inches above ground level with worm castings, worms, manure, straw and seaweed. John digs it in a little and when that layer breaks down, he adds another of the same mix which has been 'stewing' for a while. This kills the weeds, and the plants are always one step ahead. Nothing is ever sprayed. The buried weeds break down and go back into the soil.

Weeds are the bane of organic gardeners but with a little hard work and strategic management, it is possible to establish a cycle in which the weeds get left behind and everything thrives in a healthy, albeit informal manner.

John Embleton, of Albany Organics, harvesting the earthworms.

Albany Organics encourages suburban gardeners to become more environmentally responsible in small ways, such as introducing earthworms into their gardens and making use of household scraps in compost or recycling units instead of throwing them out with the rubbish each week.

Compost unit

John Embleton uses a unit which is likely to appeal to people in suburbs with a small yard and limited time and space to supervise a compost heap.

The composting unit consists of a rectangular bin with a floor and a lid. A bag of worm bedding is placed in one end with half a kilo of earthworms. Household scraps are stacked in the other end and the voracious earthworms move along and munch their way through the scraps and turn them into compost and worm castings — the finest organic fertiliser possible. A lid is advisable to reduce odours and flies, and a solid base will stop the worms escaping.

A recycling unit is not hard to put together and with the growing need to use resources and waste more effectively, such gadgets should become familiar features in many more backyards.

Kaye Embleton firmly believes that while it is much easier to "chuck in a handful of super, and spray for weeds and pests," organic methods and produce are far superior.

"By growing your own vegetables and fruit in soil which has been built up and conditioned by worms, with good humus content and without any chemical sprays, you can control what you eat without risking any long-term effects from potentially harmful insecticides and pesticides," she said.

Farmers

The merits of the industrious earthworm are also catching on in the rural sector and farmers are becoming increasingly aware of the fact that spreading tonnes of fertiliser each year at great expense does not automatically result in healthy soil.

Albany Organics has regular orders from farmers in search of alternative means of improving their land which are economically and environmentally acceptable.

"One farmer is introducing earthworms into paddocks that have been chisel ploughed," John Embleton said.

"Another is methodically buying batches of worms and putting them into the soil to improve the quality."

Chisel ploughing under the Keyline plan is basically a strategic use of a chisel plough which rips rather than turns the earth. The soil is aerated which in turn stimulates bacterial activity and provides an appropriate habitat for earthworms.

The increased microbiological activity aids organic matter decomposition and hence the nutrient availability to plants. Calcium, nitrogen, potassium, phosphorus and molybdenum are many times more readily available in worm castings than in the surrounding soil, and as John Embleton points out to his many clients, a healthy soil is the basis for healthy plants.

You've made your bed, now plant it

by Steve Fitzgerald

Upper Mongogarie, New South Wales.

OUR land is what's called 'poor' country — sandy soil with rocks not far below the surface. When we first started gardening here we would dig all the weeds and grasses out of a 'patch', removing any rocks that were near the surface. We'd then make a border for the bed from solid old boards or rocks in a vain attempt to keep the grass out.

The best soil within convenient distance to the house also had the lushest and most tenacious grasses, especially kikuyu. Any disturbance of the soil or addition of compost was considered an invitation by the kike to invade this area with speed and determination.

We tried three different gardens using this method and were beaten by invaders each time. So our problems were to enrich the soil and keep the hardy, fast growing weeds out from among our vegetables. We also believe in minimum maintenance (work) in a garden once it is established.

No-dig garden

No-dig gardening seemed a very sensible theory, and that is what we tried. To use this method you'll need a supply of sawdust and a fair amount of compost.

Providing your own compost shouldn't be a problem. If you haven't started yet, get to it — if nothing else it's a useful way of disposing of kitchen scraps and lawn clippings.

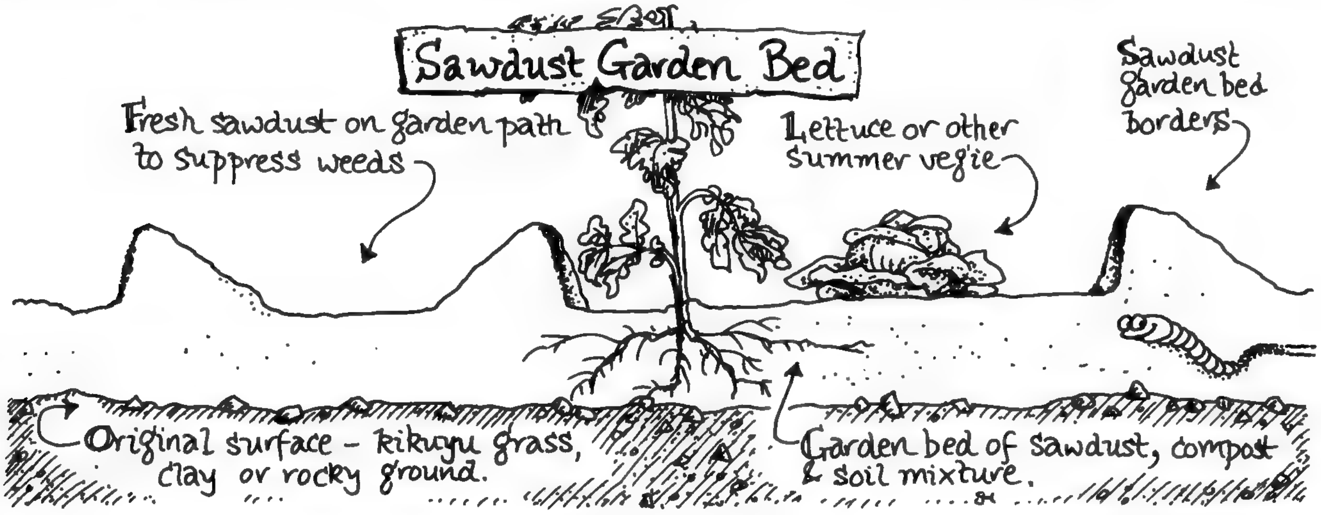
You'll need a bit of sawdust. We use about one (6 feet by 4 feet) trailer load per bed. This amount also provides enough extra for paths between the beds, which are about 18 inches wide by 12 feet long.

Our supply of sawdust comes from local bush mills. Sawdust is better for suppressing weeds than other materials such as sand or fine gravel, because eventually it breaks down to feed the soil. Finely crumbled bark mulch, or prunings put through a mulching machine may also be worth using. Sawdust will leach some of the nutrients (such as nitrogen) from your soil, particularly if it is recently cut from green wood. At this stage the soil should be rich enough to balance this and the sawdust will benefit the garden as it rots. This technique is also useful for quickly establishing gardens at a new house site where the topsoil's been disturbed or even covered.

Some people recommend putting newspaper under the sawdust. If you think the grasses in your garden area are particularly ferocious, it would be a good idea. Use six or more sheets together at a time, and overlap the edges as you put them in the beds. Don't use coloured supplements or glossy paper with colouring because they contain harmful chemicals. You can separate and recycle these items.

Next, put down a layer of sawdust about four inches thick. Cover the area you intend for your garden bed plus enough for a pathway around the edges. These paths are important to deter weed growth close to the rich soil in your garden bed. If you have more than one bed, use the pathways as dividers between them — this will also discourage 'invaders' and is a more economical use of sawdust.

Once you have the sawdust spread out, walk over it a few times to compress it. Now build sawdust 'walls' about


Sawdust Garden Bed
Fresh sawdust on garden path to suppress weeds
Lettuce or other summer vegie
Sawdust garden bed borders
Original surface - kikuyu grass, clay or rocky ground.
Garden bed of sawdust, compost & soil mixture.

six inches high around the edge of your intended garden area. These can be patted into shape and firmed by hand. Have a fairly steep wall on the inside and for the edge facing the path a more gentle slope.

Remember the compost? If you have enough, fill the beds with straight, well-aged compost. If you don't have enough compost, you'll have to make up a soil mixture to suit yourself.

An advantage of this type of garden building is that it can be extended over time. New beds can be built up when more compost and sawdust are available.

> **"I keep a layer of fresh sawdust on the paths, but just below the surface the old stuff has rotted into beautiful black soil with worms wriggling through it."**

We have found that for the first year or so some weeds and grasses will still grow up through the paths. These can either be pulled out, or more sawdust laid down to smother them. If there is sufficient sawdust, smothering is preferable because pulling out the weeds may expose others which can then spread.

The sawdust, being organic, will decompose over time and need to be replenished. This is good because you're slowly building up organic matter in your garden area. I keep a layer of fresh sawdust on the paths but just below the surface the old stuff has rotted into beautiful black soil with worms wriggling through it. The perennial plants must have their root systems spread out to take advantage of this bounty of nutrients without any competition.

In your garden beds the compost will also need topping up from time to time. I do so near the ends of summer and winter, because in northern New South Wales, spring and autumn are our most prolific growing seasons. This process will also introduce new nutrients for your plants and freshen up your soil.

If you aren't fortunate enough to live in a rural area, local wood yards or even joineries may be worth trying as sawdust sources.

One useful hint for the compost heap is to let the chooks have access to it. We breed tiger worms in our heaps and our feathered friends happily turn over the compost, breaking it down into fine particles as they search for the worms and other tit-bits.

This has a double advantage because the compost maker doesn't have to turn it during maturation (more hard work), and the chooks' scratching also keeps the heap free of weeds and grasses. Weeds can quickly cover an almost-ready compost heap robbing valuable nutrients and contaminating it with seeds and pieces of grass which will cause problems when introduced to your carefully prepared and tended garden.

Anyone know any good uses for a secondhand garden spade?

•Now that you're ready to roll up your sleeves and make some garden beds, you can start planting straight away. Summer is the best time to plant winter vegies and you can find out what to plant in the summer-month sections of Jackie French's *Earth Gardener's Companion*, which is available from newsagents until the end of January, or from Earth Garden for $8.95 posted (see page 56 for ordering details).

JACKEY'S MARSH FOREST FESTIVAL
NORTHERN TASMANIA.

Celebrating Landcare, 26 to 28 January, 1991.

Everyone is welcome at this year's festival, to be held again in the picturesque valley of Jackey's Marsh, which is backed by Quamby Bluff and fringed by the Great western Tiers, the gateway to the Central Plteau World Heritage Area.

This year's theme is 'Celebrating Landcare', and there will be tree planting on the site and a land restoration project along Jackey's Creek. Jackey's Marsh Forest Festivals are also famous for their vibrant music and performing arts.

Other activities will include: •alternative energy displays •biodynamic agriculture •forest walks •recycling •fence building •alternative healing techniques.

There will also be artists presenting circus, dance, puppets and drama. A special emphasis is on children's activities and child care.

The festival site will be clearly sign posted from Deloraine. Pre-purchase: $25; day ticket: $10, children free. Gate price: $30, concession: $25. For more information and pre-purchase tickets, please contact: Jackey's Marsh Forest Festival, 112 Emu Bay Rd, Deloraine, 7304, Tasmania; telephone (003) 622 713.

ROUGH WATERS ZAP THE MICROWAVE OVEN

As promised in EG 73, we are reprinting below a startling article on the emerging hazards of using microwave ovens. This article first appeared in the British national newspaper, *The Guardian*, on 26 August last year, and the conclusions seem very plain. For example, according to Professor Richard Lacey, the Leeds microbiologist who first exposed the hazards of listeria bacterium, it is unsafe to use a microwave oven to reheat many pre-cooked foods from the supermarket freezer.

THREE consumer icons, the very symbols of smart affluence, have dominated the past decade: the word processor, the video recorder and the microwave oven. The microwave is beginning to wobble on its pedestal. For all of its alleged chic, ease and brilliance, it has been proved in British Government tests to be a failure in its basic job of cooking food safely.

The 60 percent of British households which, by choice or poverty, do not have a microwave, may warm to the news. But the other 40 percent, who have spent at least $400 each in the past few years, will be more than a little browned off.

Preliminary studies by researchers at two Government institutes showed that microwaves consistently failed evenly to cook foods to a "safe" 70°C even when instructions from the makers were scrupulously followed. No make of oven worked well and "one consistently performed poorly", the researchers concluded. "The ovens did not always attain throughout the product, the temperatures needed to kill salmonella, campylobactor or listeria."

It's not every day that the British Government takes a swipe at a successful consumer industry, but the Ministry of Agriculture has clearly been frightened by the hygiene hazard which microwaves pose.

Microwaves have always had their critics. When they first appeared in the late 1970s there were fears that their rays could leak and zap your chances of extending the family tree. But improvements were made, doubts ebbed and sales soared. Latterly, the opponents to microwaves have been mainly purist foodies who complained that the new-fangled machines failed to emulate the Aga or even a decent electric cooker in producing a nicely browned joint.

Cold spots

But reports also started cropping up in the scientific journals about "cold spots" — the uneven way that microwaves work.

Hidden within the microwave is a device called a magnatron, which converts electric current from the mains into extremely short and uniform "microwaves". They resemble radio waves, except that at around 12 cm they are 100 times shorter. These baby waves cannot penetrate metal. Once produced they bounce energetically away from the silvered sides of the oven and crash into anything in its middle.

At best, however, the microwaves can only penetrate up to two inches into foods, and their only effective power is their ability to agitate water molecules they strike. The agitated water molecules grow hot and conduct their heat inwards to the centre of the food.

The basic problem is that without enough water molecules the microwave is helpless. It is great at re-heating a cup of coffee, but no good at crisping the fatty skin of a chicken or browning the pastry of a mince pie. The mince will bubble to a tongue-burning temperature while the pastry, made of fat and flour, remains soggy and cold. Still, a flaccid mince pie is not likely to harm anything but your burned tongue.

A dish of cauliflower cheese, and hundreds of other 'cook-chill' prepared meals bought from supermarkets, pose an altogether more serious hazard — food poisoning.

The outside layer of cheese may bubble away soon after the timer is turned on. This is because the watery cauli just under it is able to grow hot and produce steam. But deeper in, the vegetables remain cold because the fatty cheese has acted as a blanket or envelope, preventing the microwaves from getting near. The meal looks hot, but inside it remains lukewarm and food poisoning organisms like listeria and salmonella bacteria are heated to a temperature where they can multiply.

The cook-chill foods industry, with produce sales in excess of 130 million pounds a year in Britain, was directly exposed in a second major report this week from the Government, which has finally admitted the hygiene failures of our food supply.

One sample in ten of patés, which are cooked in central kitchens and then chilled for weeks before sale, were found to be contaminated with listeria, the bacterium that can causes still-births and death to infected newborn and others, like the elderly and ill, with weakened immune systems. Listeria bacteria have the unusual ability to multiply and even grow more virulent at refrigerated temperatures as low as 4°C.

Poor old paté has had a bad press, and its sales could plummet. The truth is that many foods are now contaminated with food-poisoning organisms, and putting them into a microwave is a recipe for illness because the machines cannot uniformly heat foods of uneven density and water content.

Researchers have also found that salmonella in fresh poultry is infrequently killed even when the birds are cooked to manufacturers' instructions, according to a report in *The Food Magazine* of the London Food Commission.

The magazine also reported that only three percent of consumers recognise microwaves as a likely cause of food poisoning, according to a Ministry of Agriculture survey last year.

Unsafe to re-heat 'cook-chill' meals

To make matters worse, some food producers have found an ingenious method of excusing themselves should you get sick after a microwaved meal.

Instead of warning you that their products may not be cooked evenly in the microwave to the 70°C recommended to kill bacteria, they have chosen instead simply to remove all previous instructions from their packets. The large chain store Sainsbury's insists "there is nothing sinister" in its erasures, since there is no proven link between cook-chill meals and listeriosis. But the Consumers' Association, which exposed this behaviour, says it is unsafe to re-heat any cook-chill or ready-made real in a microwave.

Advice like this could kill the microwave stone dead since this is its essential function for many millions of people who say they are too busy to cook traditionally and who prefer to 'graze' like docile animals, eating on the run.

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Microwaves unsafe for heating breast milk

OVERSEAS findings on possible dangers to babies have renewed calls by a Melbourne specialist not to use microwaves to heat breast milk.

This follows claims by doctors in a leading overseas medical journal that microwave heating creates potentially dangerous substances in baby milk that may damage the brain, liver and kidneys.

Research published in the British medical journal *The Lancet* also cast doubts on the safety of microwaves for heating foods such as cheese, meat or fish that contain amino acids, the building blocks of proteins.

Dr Neil Campbell, the Director of Neonatology at the Royal Children's Hospital in Melbourne, said aspects of *The Lancet* report reinforced long-standing concern by the hospital over the use of microwaves for heating expressed breast milk.

It was known that this could damage the nutritional and immunological properties of breast milk, and the hospital had advocated for five years that microwaves not be used for infant feeds. Formula milk may not be affected in this way, because it is less complex than human milk and has no immunological properties.

Although Dr Campbell believes traditional methods of cooking are preferable and that food contamination during heating is an "obvious possibility", he said there has been no apparent epidemic linked to microwave heating.

Dr Campbell said babies were sometimes scalded by breast and formula milk because temperatures reached in microwaves were unpredictable. He said parents who choose microwaving should take precautions: put the microwave on the same time setting when the milk is heated, use the same bottle, swill the milk about to ensure an even spread of temperature, and test the temperature against the wrist.

According to *The Lancet*, doctors at the Pediatrics Department of the University of Vienna found that conventionally heated milk showed no abnormal molecular changes, but microwaved samples contained two abnormal amino acids, D-proline and cis-hydroxyproline. The Viennese doctors say that D-proline is neurotoxic, which means that it can kill brain and other nerve cells. it is also toxic to liver and kidney cells. Cis-hydroxyproline, when used by the body to build protein, may cause "structural, functional and immunological effects".

Season by Season

Earth Garden's regular organic gardening column, written by Jackie French

Summer — minimising work

THINGS grow in summer. It's easy to dig an enormous bed in spring which turns to weeds and yellow seedlings by Christmas, or plant too many seedlings too close together, not quite believing that they really will grow full size in a few months.

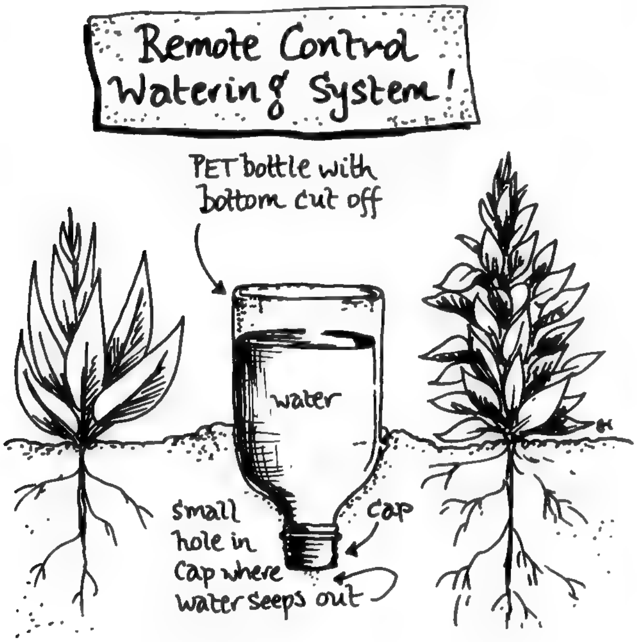
Weeds

Weeds are the worst problem now. Don't pull them out. Cover them with newspaper, or strips of weed mat weighed down with rocks. Feed your plants more while the weeds die and turn to fertiliser beneath their mulch.

Annual weeds don't even need to be mulched. Whippersnip or mow them instead, then use the residue to mulch your plants. We get young oats springing from the mulch. Don't regard them as an enemy: turn over the mulch to suffocate the weeds, or just keep snipping off the tops.

Watering

Gardens can bake if you go away even for a few days. Cover them up. They won't die in a few days, and while they may go yellow in a week they'll soon green up again. Staple together newspaper (or old sheets, blankets, whatever is to hand) and drape it over a few stakes in the centre of the garden. If it rains, and you've used newspaper, the paper will decay but then the garden won't need shelter anyway. The sheets shouldn't get dirty as long as they don't touch the ground.


Remote Control Watering System!
PET bottle with bottom cut off
water
small hole in cap where water seeps out
cap

The longest I've ever left a covered garden is two weeks. Be wary when you take the top off because the longer you've left it the weaker the plants will be. You'll probably have to water every day for a week till they toughen up again.

If you want to keep watering your plants fill up every bottle you can lay your hands on. Place a little hole in the top — as small as you can — and thrust it neck downwards into the soil. The water will gradually seep into the garden, watering it.

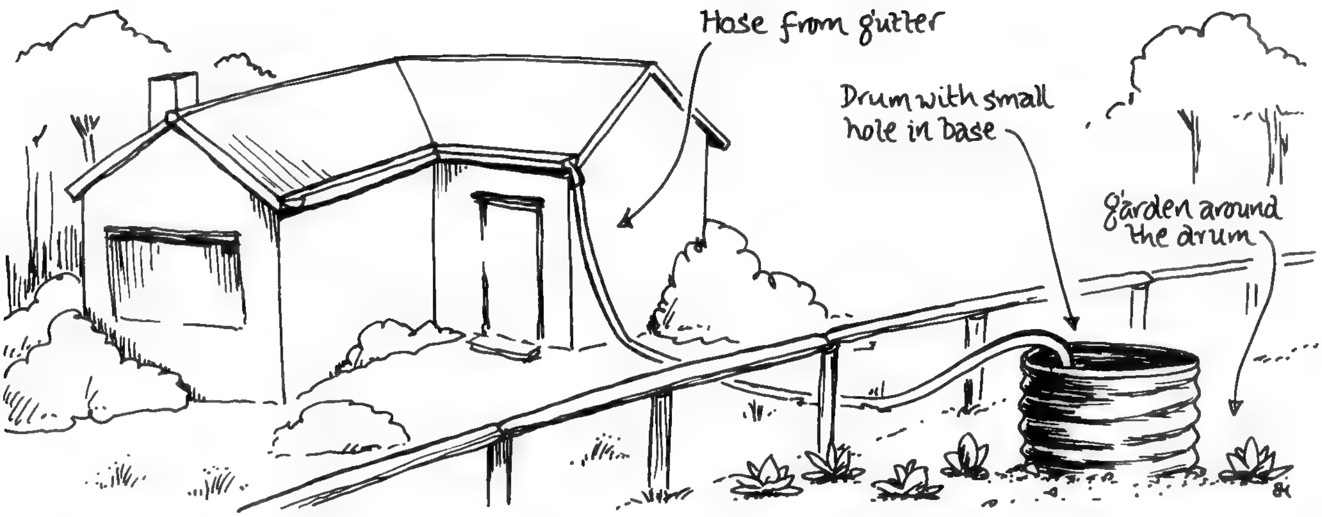
If you go away often it may be worthwhile installing a drip system and leaving it on. You can also place drums around your garden which can be filled easily with a hose, or during a rain storm, so that the water seeps out slowly through small holes in the bottom. One friend in a dry area connected such a drum system to the downpipe on the house. The buckets filled even with a small shower of rain from the roof catchment.

A self-watering garden

This system can be used for any tree planted on a dry slope too far away to water — or a garden in a hot, dry area.

Trees

When you plant a tree in a hot, dry area plant it slightly below the level of the soil. Surround the base of the



tree with plastic. Pile on rocks, and then put another layer of plastic on top. Weigh this down with a few stones. At night the moisture in the air will condense between the two layers and pour down next to the tree.

Vegetables

Either make your garden in a slight hollow — dig down about two hand depths — or mound up soil or rocks around your garden. A long garden is best, no more than a metre wide but as long as you like, pointing east-west. Either way, have the sides sloping down.

Arrange the two layers of plastic as above for the trees. You will be surprised how much moisture collects. Mulch the plants in the garden well, avoid shallow-rooted, water-fat vegetables like lettuce, and you may not need to water your garden at all.

The box garden — a lot of vegetables in a small space

Get a styrofoam box from the supermarket. Half fill it with weeds, lawn clippings or cabbage leaves. Fill the rest with potting mix, compost or even garden soil (cook it for half an hour first to kill weed seeds). Then bung in some seedlings.

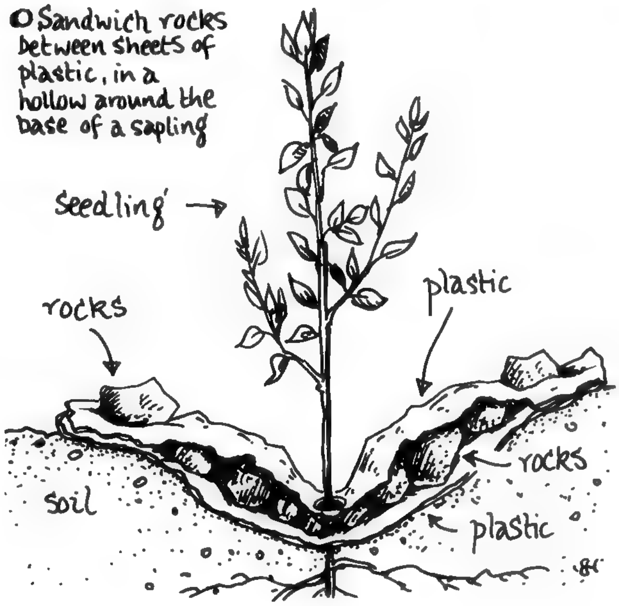
You can fit a lot of plants in a styrofoam box: say six lettuces, one cucumber, three silver beet plants or a tomato or zucchini that will sprawl over the edge so it doesn't take up too much room.

Another combination could be six parsley plants, a capsicum, a come-and-come-again lettuce (you just pull off the leaves as you want them) and a cucumber trailing out of it — the variety is endless. Put your box next to a post and let climbing beans trail up it. A herb version of a box garden (say: mint, parsley, chives, basil and coriander) would make a thoughtful, inexpensive present for city friends, especially with the sides of the box painted brightly.

Salad box

This year we have a salad box outside the back door. It gets fed a range of kitchen waste, including: the green water from the steamed vegetables (we don't use salt, and leftover vegetable water is good fertiliser), cold tea leaves, coffee grounds and leftover herbal tea detritus, and the dirt from the dust pan. This dirt is high in nitrogen and phosphorous — most dust is — and it will have bits of hair and skin as well (excellent fertiliser). The salad box also cops anything else that's convenient to throw out the back door.

In the box we're growing parsley and chives, a cut-and-come-again lettuce (cos will do), a cucumber, a rainbow chard plant (the young leaves are good in salads), Egyptian mint (very mild and good chopped in tabouli) and a Tiny Tim tomato which I will keep pruned or let sag over the edge. The box certainly doesn't keep us in salads but it can provide


O Sandwich rocks between sheets of plastic, in a hollow around the base of a sapling
Seedling
rocks
plastic
rocks
soil
plastic

a meal when it's dark or raining and I don't want to trudge down to the vegetable garden. Like the suggestions above, it would make an excellent Christmas present for an elderly person.

You can cram a lot in a box because plants can lean over the edge. You only need enough room for the roots, as long as you water it and feed it with soluble fertiliser every day. You can use either commercial seaweed-based fertiliser or homemade *'throw weeds, comfrey, compost, manure and urine in a bucket, cover with water, wait a week and ladle it out'* fertiliser—otherwise known as brown gunge.

One box can provide two lettuces a week, four feeds of silver beet, three harvests of celery, a couple of cucumbers and parsley.

> **"Get a styrofoam box from the supermarket . . . a herb version of a box garden (say: mint, parsley, chives, basil and coriander) would make a thoughtful present for city friends."**

Comfrey

Fifteen years ago I was given a small piece of comfrey. We accidentally rotary hoed it (in those days I was still digging and ploughing). Now there are perhaps a thousand plants, maybe more.

Comfrey used to be eaten till (possibly unproved) health reports warned against it. It is the best skin ointment I know, for anything from scars to cement-induced sores. Squeeze the juice from young leaves, or the sap from the root, or make comfrey ointment. One pot of ointment goes a long way but all the thousand odd plants in our garden are useful.

Comfrey as a weed controller

If you have couch or kikuya invading your garden beds, plant a comfrey barrier. This keeps out grass and anything else. Comfrey dies down in winter but when it's cold enough for that the grass stops growing too. Our comfrey starts moving a week or two before the grass does.

Comfrey and asparagus

This is an easy way to have a self-fertilising, self-weeding asparagus bed. When comfrey dies down in winter a large bare patch is left which is free of weeds and fertilised by dead comfrey leaves. Plant asparagus roots along one edge — as far from the comfrey roots as you can but still within the bare area.

The comfrey will come up before the asparagus but the asparagus head will grow above the comfrey leaves. Comfrey is deep rooted and asparagus shallow rooted and the deep roots bring up leached nutrients which mulch and feed the asparagus when they die in winter.

No garden will feed you forever if you continue to take food from it without giving anything back. But the comfrey/asparagus association comes close to it. Because you are only taking tips for about three months of the year, fewer nutrients are removed than in most gardens anyway.

If you don't have asparagus in', plant seeds now. The new varieties will give you a small crop next year, and a large crop the year after. Asparagus will feed you every spring when other vegetables are going to seed — a luxury after winter.

Comfrey as mulch

I whippersnip the comfrey barriers along our gardens beds whenever I get around to it. The leaves shoot out onto the garden beds or around the trees, wilt and become mulch. Alternatively, you can cover comfrey leaves with water in a bucket, and when it turns brown use the water to feed pot plants or as extra feeding for lettuce and celery. Lettuce becomes bitter, and celery tough, if there is any check in their feeding. Try spraying the comfrey water onto sickly plants as a 'foliar feed' — it also seems to improve frost resistance in tender plants.

Comfrey ointment

Clean and chop 50 g of the root and steep it on low heat in 500 ml of olive oil for two hours. Don't boil. Remove it from the heat (don't strain it) and add 50 ml of melted beeswax.

If you don't have beeswax, don't worry. The ointment won't congeal, it will simply be a dark green oil.

Summer planting

Plant autumn crops now. What you don't plant in the next couple of months you won't eat in mid-winter: cabbages, cauliflowers, broccoli, Brussels sprouts, extra carrots, leeks and peas to eat as the weather cools (they won't set in hot weather). Plant more beans as soon as the last lot starts flowering. Plant more corn when the last lot reaches your ankles. Plant more zucchini in case the first gets mildew (strongly growing young plants are more resistant). You can also plant a new lot of tomatoes or take cuttings from old ones. Pin a branch to the ground and dig it up when roots grow along it; then pot it and stake it gently upright.

Problems

Fruit fly. See previous editions of Earth Garden. Remember that fruit fly are attracted to ripe fruit and mostly breed on the ground. Pick all fruit just before it gets ripe, and never leave windfalls more than a day. Watch out for fruit fly breeding in 'compost heaps' (a euphemism for piles of rubbish and food scraps that aren't heating up at all). Add blood and bone or sprinkle with urine to get them going.

28 spot ladybirds. These like potatoes, tomatoes and pepinoes. They speckled our eggplant leaves brown last year before I noticed what was happening. A reflective mulch (like alfoil or reflective insulation) will repel them, and masses of yellow daisies or marigolds will keep the numbers down as long as they are thickly planted *underneath* the other plants. I found last year that a strong nettle spray (leave the nettles in water till it turns brown, then spray the dark brown liquid) helped repel them.

As a last resort make a spray of derris and water and spray it on the leaves (underneath as well). This is a stomach poison, not a contact poison — the ladybirds have to eat the leaf underneath to be affected. It will also repel them. For a long term solution, attract birds and keep cats away.

Fruit rot. Try a weekly seaweed, nettle or even weed spray. The best I know is a mixture of chamomile flowers, chives, nettles, seaweed, casuarina leaves, horsetail and comfrey — or as many of those as you can get. Cover them with water and spray on the foliage when the liquid is light brown. Spray just before picking to minimise post-harvest rot. Thin out the fruit if necessary. After picking try and keep the fruit as cool as you can: hot and humid storage areas, even for a short time, can start them rotting. Pick out any bad fruit straight away. You can also try dipping fruit for a second or two into boiling water, or hot, very salty water, or hot chamomile tea. Make sure the fruit is dry before it's stored. (I leave them to dry on newspaper).

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Whitefly. If your plant leaves are wilting, mottled or speckled look underneath for clouds of small white flies. Spray them thoroughly underneath the leaves every second day and increase the potash in your soil with wood ash, comfrey and compost.

Suburban scavenging

Many street trees can be useful. In fact very few ornamentals didn't have some use — our ancestors were canny with their gardens, and either planted useful species or found a use for the others. Summer is a good time for free harvests. (Note: avoid harvests near highways and busy streets — they may be high in lead).*

Horse chestnuts

Horse chestnuts are often street trees in cooler areas. Cut the chestnuts into slices, cover them with water and change the water every day till it doesn't taste bitter. Place the slices on alfoil and dry outside or in a cool oven. Grind them to flour when they are crisp. Add them to cakes and biscuits for a richer flavour — a dessertspoon of chestnut flour to one cup of ordinary flour. I make horsechestnut pancakes using one dessertspoon of ordinary flour to a cup of chestnut flour.

Paperbark

Paperbark trees are a common Sydney street tree. Use the paper-like bark as insulation under you carpet, or in the roof. Glue sheets together to make a waterproof blanket under a child's bed.

Palms

The sap of many palms is sweet — drill a small hole and find out. Most saps need to be boiled to reduce them to make them sweet enough for cooking or pancakes.

Kurrajongs

Eat the fruit — some is better than others. The roots are edible too: you can cook them like parsnips. A small harvest won't hurt the tree but you may feel conspicuous digging up roots on the footpath.

Pines

Many pines — not just stone pines and Swiss pines — produce edible nuts, although many are too small to be worth extracting commercially. Taste them and see.

Oak trees

Acorns can be used for flour, oil or coffee. Taste them. If they're bitter soak them in water till they taste sweet. Make acorn oil by drying the acorns for a week in the sun, cracking them with a hammer, then weighing them in a sieve with a weight on top. Let the oil seep out for at least a week.

For acorn flour, dry the acorns in the oven till crisp — this may take five to six hours. Crack them with a hammer then grind them in the blender. Acorn flour is very rich. See horse chestnut flour.

Fried acorns

Take sweet, soaked acorns. Soak them again in one cup of water to a dessertspoon of honey overnight. Fry them in hot oil till they float to the surface. Eat them hot, with a sprinkle of salt if you add salt to peanuts.

Wattle

Some wattle seeds are edible — ignore them if they're bitter. Layer wattle blossom in sugar or pale honey and use it as a flavouring instead of vanilla. Taste wattle gum — it flows readily in summer. If it's bitter leave it alone unless you want a cure for constipation. Otherwise melt it in hot water and add fruit juice or cordial and let it set as jelly. *Acacia farnesia* seeds are supposed to be an aphrodisiac. I've tried them on friends, chooks and an Indian game rooster: no noticeable effects.

Hibiscus

Make hibiscus tea by pouring boiling water onto the flowers. It is slightly laxative and delicious — perhaps my favourite. You can also eat the flowers stuffed with rice and simmered in stock, or deep fried in batter.

Pickle the buds in spiced vinegar. Just pour boiling vinegar over them with brown sugar or honey to taste, a touch of cloves and mixed spice. Eat them like olives after six weeks.

Young hibiscus shoots and buds can be eaten raw in salads, or boiled as a vegetable. You can also steam them and serve them cold with vinaigrette dressing. Hibiscus fruit — the seed container that matures after the petals drop off — can be eaten fresh or cooked.

Irish strawberry tree

The fruit of this tree is edible. Sometimes it's good enough to eat fresh, and sometimes it's better stewed with sugar or made into chutney.

It makes excellent chutney. Like most ornamentals, strawberry trees haven't been selected for their ability to give good fruit. Some are much better than others and the good ones are worth hunting down.

**Government scientists last month called for a drop in the Australian Standard for the "acceptable level" of lead contamination in the human body from 30 parts per million to 10 parts per million. This follows new research suggesting that, particularly for women of child-bearing ages, the previous allowable levels have been too high. Maybe one day the "acceptable levels" of chemical contamination of toxic substances like dioxin and lead will be set at zero.*

—Alan.

Questions and Answers

If you have a question you'd like answered about pest control, gardening, or plants and their uses, send a stamped self-addressed envelope to Jackie French, RMB Araluen Valley, NSW, 2622.

Dear Jackie,

I am interested in organic gardening courses and I would like to know if you still run courses on your property. Thank you,

Mrs Burge, Western Australia.

Organic gardening courses

Dear Mrs Burge,

There are many courses available, although I don't know of one near you — the WA Organic Growers would be your best source of information.

We still give occasional day or weekend workshops. I don't organise or advertise them though. We charge $300 a group for a weekend workshop, or $150 a group for a day, so if people can get 29 others interested that's $7.50 per person. 30 is a maximum, and there's no minimum. The courses are very intensive, and angled to suit the group but I think two intensive days combined with the books probably covers as much as a longer course. Workshops range from pest control to bush tucker, no work gardens, alternative technology, weeds, edible landscaping and wombat ecology.

I also give talks and workshops anywhere I'm asked as time permits, if our expenses are paid. I charge a fee only if it's a profit-making exercise, or if we're broke.

Dear Jackie,

I have just ordered a copy of 'The Earth Gardener's Companion' and I take the opportunity to enclose a note to you about carob. The seeds contain a vegetable gum which is much prized by the commercial food industry as a stabiliser, as in ice cream. The seeds are hard as rocks and not amenable to home processing. They would probably break or damage a blender. It is the pods minus the seeds that are the source of carob flour, and can be easily processed at home.

Here in Perth we harvest pods every March from street trees in Shenton Park (planted many years ago as feed for cart horses). I cut the ripe pods into small pieces, remove the seeds, and then toast the pieces until they are quite dry.

It is necessary to dry them or it is not possible to grind them in the blender — they are too sticky. The resulting powder is then sieved. The fine powder becomes carob flour, and the coarser bits can be brewed as tea. The toasting process lightly caramelises some of the sugars in the pod to improve the colour and flavour.

Some people we know bake whole pods, then smash the brittle pieces as small as they wish with a hammer.

Pat Scott, Roleystone, WA.

Carob trees

Dear Pat,

Thank you very much for your letter. I should have been clearer about the seeds and pods — I keep chopping bits out to keep 'Season By Season' short. (I hurriedly checked 'A to Z of Useful Plants' to make sure I hadn't done the same there — but I hadn't).

By carob gum I meant carob sap — I'd forgotten about the 'carob gum' used in confectionery. I've used carob

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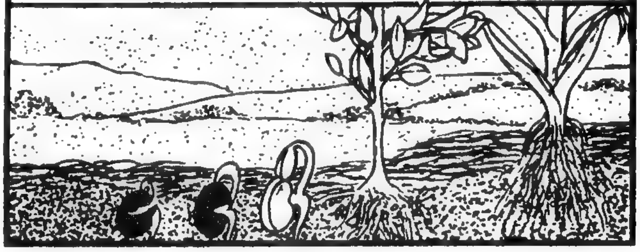


sap several times as glue. It sticks well but becomes brittle after a while.

While the old carob pods are used to make the chocolate substitute, we use the seeds to make carob 'flour'. It's not as strong, so more can be used instead of 'real' flour and it's not as sticky, although I've used it as a cocoa substitute in drinks too.

I've found that the seeds can be ground as long as they are very dry. I bash them with a hammer a couple of times, then stick them in the blender. We've also used the seeds as hen food but they have to be soaked for several days (or better still, cooked) or the hens ignore them. We eat the young pods too, like green beans. They need a little more cooking and need to be firmly 'stringed'.

It was fascinating that the carob trees were planted for cart horse food. During the drought we tried feeding young and old pods to horses and cattle, but they ignored them even when they were quite hungry. Perhaps they have to get used to them as calves. One of the properties near here has a stand of old carob trees in a paddock but the stock ignore both the trees and their pods. Yet I've read many accounts of them as stock food. The chooks will only eat them 'processed'!

Ellen Hanley of Sydney has a problem with couch grass in garden beds.

Couch grass

Dear Ellen,

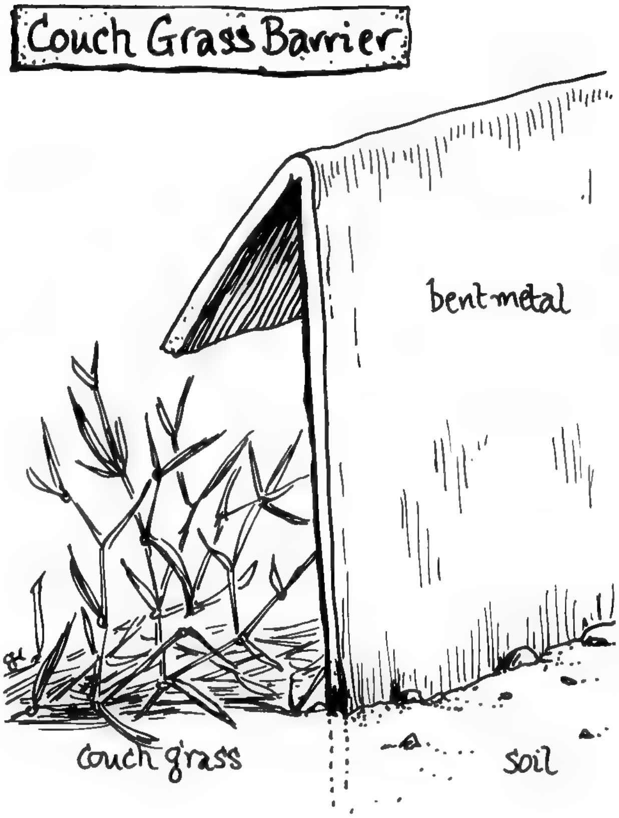
There are many things you can do with couch grass:
- eat it, steamed for 20 minutes then dipped in sesame oil and soy sauce (fiddly, and the result isn't worth the trouble)
- make a drink by boiling it for 30 minutes (it tastes a bit like sarsparilla and is a good tonic after cystitis)
- keep it out of the garden with a couch grass fence of bent metal. Couch grass mostly spreads by sending out runners (it also seeds, but runners are the real enemy). So if you can block its path you've won the battle. You can also use a comfrey barrier — see above
- kill it by covering it with *clear* plastic (not black — it'll creep underneath) for about three weeks till it grows lank and lush then starts to rot
- as a last resort pour on stale undiluted urine on a hot day; don't water for three days.

Pomegranate trees

Dear Jackie,

I would like to grow a pomegranate tree here in Brisbane. Can the fruit be used or is it just ornamental?
H R Vijec, Brisbane.

Pomegranates grow from cold to sub-tropical areas, so it'll be fine in Brisbane. Splitting and rotting fruit may be a problem though with heat and frequent rain and drying out. There's not much you can do about it except not give it lots of nitrogenous fertiliser. If you can't find a tree in local nurseries ask them to order one in for you, or find a pomegranate in autumn in a good quality fruit shop, and plant the seeds.



You can use the pomegranate seeds and pulp like passionfruit in fruit salads or to make cordial. They used to be served whole in bowls of ice — each person scooped out the seeds from the fruit themselves.

Pomegranate antiseptic

Another use for pomegranates is as an antiseptic wash for grazes and cuts. Pour one cup of boiling water over a cup of leaves. Steep till tepid.

Pomegranate cordial

Cover one cup of pulp with a cup of sugar or pale honey. Leave it for a week. Strain off the liquid and keep it in the fridge. You can drink it with ice water, soda or tequila.

•Jackie's new book, 'Natural Control Of Garden Pests', is now on sale at $15.95. 'Natural Control of Garden Pests' condenses 16 years observation and experimentation in the control of Australian pests using natural gardening and farming methods. It includes sections on organic pest remedies, strategies for problem-free gardens and orchards, and companion planting that really works.

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Wagon teams at Bungaree!

On the weekend of 8 and 9 December, three teams of horsedrawn wagons converged on Bungaree, near Ballarat, Victoria, to take part in the Working Horse Hay Day Festival. One team of horses, pulling a flat top wagon, travelled from Geelong, one team came from Maldon and another from Trentham.

The two day Festival, on the farm of the Grigg family, featured a range of activities from yesteryear, and people were able to try their hand at activities like ploughing. A variety of horsedrawn vehicles were on display as well as horsedrawn agricultural machinery, and the Hay Day Festival was another fine example of the resurgent interest in horse-drawn farming activities.

Low tech/high cuisine mini-menus

by Patrick F Howden

MacLeay Island, Queensland.

THESE basic recipes are an escape from ingredients that are often available only from high technology industries. They use items commonly available even in cool climate gardens and are spartan both with ingredients and preparation steps.

As far as possible, big system products such as sugar, yeast flour and cereal are avoided or minimised and replaced with alternatives like dried beans, potatoes, sweet corn, nuts and seeds. Sugar can be replaced by honey, malt, sweet fruits and plants or by squeezing your own sugar cane.

Cheese one

Warm some milk above a stove until it curdles. Boil it briefly and add one tablespoon of vinegar per pint, and strain. Sorrel and lemon juice can also replace rennet in cheese-making.

Cheese two

Mash cooked beans and oils plus tastex or marmite to taste, with other herbs and flavourings. Press this mixture into a dish and leave it to set (it won't keep indefinitely).

Milk or cream

Whizz finely ground nuts or well-cooked soya flour, seeds or porridge oats in water to the desired consistency. Strain finely for tea or coffee blending or add drops of oil for creaminess. Mix bean cream with soya for balanced protein. Custard apple blended with one to two parts water replaces cream and milk. It's delicious but may not last too long.

Blackberry and elder wine

Press or pound passionfruit, blackberries or elderberries until one gallon of juice is obtained. Strain through mesh. Add one quart of boiling water to the juice. Let this stand for 24 hours and stir occasionally. Strain it off into a cask and add one pound of sugar per gallon. Cork tightly for one month.

Cake

Mix strong tea, sugar or honey, flour and dried fruit and bake for 1.5 hours. Or, you can make a great cake-pudding from mixtures of sweet and tangy fruit mush (see 'dry cider' below) baked with dates and raisins. It tastes like Christmas pudding.

(Black) berry junket

Juice the blackberries and let them stand in a warm room for a few hours. Eat the resultant junket with cream, biscuits and cake or on crushed cereal.

Solar-powered bread biscuits

1/2 a pound flour or crushed cereal

1 oz sugar

1 oz milled or finely chopped walnuts or peanuts

1 oz chopped minced raisins or other dried fruit (you could add a chopped apple.

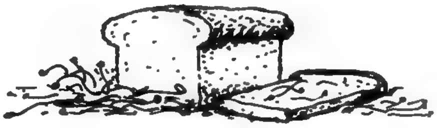
Warm a black wooden board in the sun, mix the ingredients to a soft dough with water and knead well for one minute. Roll out thinly on a floured board, cut into shapes and place on the black board in hot sun for at least three hours until dried out. Figure your own conversion factors.

Yeastless bread

See the book 'Nature Foods' (through Rider) for yeastless bread recipes. Also see the recipe for apple butter and several recipes for no-knead breads, chapatis and nan in same book.

Solar-powered sprouts bread

Sprout wheat or rye for two days. Homogenize and possibly add drops of water to mould it into a loaf. Add seeds, nuts and caraway if needed. Dry this for two days in the sun or place it in an oven for hours at the lowest setting (about 100°C). To some, it's indistinguishable from cake.



Nut butters and spreads

Lightly roast 1.5 cups of peanuts, sesame seeds, hazelnuts, cashews, pumpkin seeds or sunflower seeds and add two tablespoons of oil and half a teaspoon of salt. Whizz this in a blender, shaking the whole blender fiendishly to help it mix.

Onion butter

Peel and quarter five pounds of onions into a pot, scantily covered with water. Cover and boil, and simmer for

24 hours (regretfully). Add a little water as necessary. The final concentrate is dark brown and lumpy. Break it up into a paste, salt it to taste, and let it simmer uncovered to evaporate the excess water. A much easier butter replacement is mashed avocado used directly on bread or toast.

Dry cider

Squash old cooking apples using a fruit press, a muslin pound or a mangle. Strain the juice through muslin. Store it in a warm place and allow it to bubble happily and the sediment to drop. Put it in an airtight container for six months in a cool place. Strain and bottle. The first mash can make the cake-pudding mentioned above. Add sugar initially for sweetness. Passionfruit is beaut too.

Five day champagne

It's true. Near fill a big jar with grapes. Add water to within two to four cm of the top. Screw on a gas-tight pressure lid. Place it in a box (if it explodes) in a warm room or car for three to five days with occasional vigorous shaking. The grapes slowly shatter and ferment. Eat the remainder and drink the champagne. If the lid is not gas tight, don't worry — you get dry wine!

Culture-less Outback cold yoghurt

Place one pint or litre of fresh or bottled milk in a 'light-tight' crock, and warm it for one to two days on a sunny verandah. No previous culture, heating or stirring is needed.

Seed and bean sprouting

Soak poison-free seeds in lukewarm water for 24 hours in the dark (for example in a thermos). Next put them in a large jar covered at the opening with muslin. Rinse three or four times daily until they've sprouted. Waste water (if it's not from soya beans) can be used as soups or plant fertiliser. Sprouts must have air and when they're one to two inches long, put them in the sunlight for a few hours.

Pre-mixed balanced muesli

This muesli will fill you for a whole day. To six cups of muesli base add half a cup of crushed millet, one and a half cups of mixed dried fruit (for example dates, raisins and coconut), one cup of chopped mixed nuts or seeds, half a cup of wheat germ and/or bran, chopped fresh fruit, salt, honey and/or malt. (You could also add powdered milk here). Stir in boiling water or soak overnight cold or hot in a thermos. Serve and add milk or yoghurt if desired. One handful is

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quite enough of that! Treat toasted muesli the same way — it's an ideal trail mix and you can simply add water.

Low energy thermos fruit juice and stew

Cut up fruit (apples and blackberries) to fill half a thermos. Fill it with boiling water, replace the cap, and leave it for 20 minutes. Pour out the powerful fruit juice, fill the thermos with more boiling water and add some dried fruit (and honey if you must). Two hours later strain out the delicious fruit stew which can also be added to meat and vegie stews. Did you know that in three layers of a pressure cooker you can cook meat in the bottom layer, vegetables next and fruit on the top level — without any flavour mix?

Low sweetness jams

Cook good fruit until it's well soft (to kill bacteria), add one to two pounds of honey (sugar or substitute) to eight pounds of fruit. Add two tablespoons of arrowroot (and agar-agar thickening if necessary) per pint. Pot in clean hot airtight jars which have been immersed jars in boiling water for five minutes. Turn them upside down for the jam to sterilise the lids. The jam won't last forever but it's so good and fruity, it's not likely to anyway!

Preserving by drying

Many fruits, vegetables, meat and fish can be dried in a sunny verandah or hung up in a warm kitchen, on the warming tray of a stove. Herbs and greens can be dried in net bags. Cored, unpeeled apples can be sliced into rings, dipped in salt water, and threaded on strings in a warm or sunny place indoors.

Fish batter

Try 50/50 flour and custard powder.

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~ Birds and the garden ~

by Sophie Masson

Guyra, New South Wales.

IT doesn't matter whether you are a city or country Earth Gardener, one of the great pleasures of the great outdoors is bird-watching. When we lived in the city, we liked observing magpies, currawongs, king parrots, and a host of other birds. Now that we live in the country, we watch rosellas, galahs, lorikeets, finches, robins, magpies, currawongs — and many others!

Bird-watching is easy, fun to do, and cheap. You can build a bird table, as we did, out of scraps. You can grow your own bird seed and you can make your garden more attractive to birds by planting trees and shrubs they like.

We made our bird table from a flat bit of wood, edged with thin borders of masonite, and set on top of an old iron fence post. The table is high up so the birds can't get caught by cats. That's also the reason for an iron post because cats can't climb the slippery metal. We also use different kinds of seeds to attract different kinds of birds. For example, sunflower seeds attract rosellas and galahs, and wheat is suitable for other kinds of birds. We also have a stack of sparrows living in our garden, and we thought the hard sunflower seeds would defeat them, but not so!

Sparrows are extremely clever little birds, and they have found a way of getting into the seeds. Watching them working out new ways of adapting to circumstance is one of the joys of bird-watching.

Birds will also enjoy bread, especially if soaked with milk, nuts and grains. Some birds, like currawongs, also like meat. Birds will love your garden if you plant bushes and trees for them. We have several fruit trees which they delight in. One late autumn day, there was a magnificent cloud of rainbow lorikeets in the old apple, stripping it of the last of its fruit. The pyracanthus bush, with its beautiful bright berries, is a favoured meeting place during winter.

Insect-eating and nectar-loving birds will also appreciate lots of trees and bushes. Some native plants which birds love include: most acacias, most melaleucas, grevilleas, hakeas, callistemons, banksias and many eucalypts. When you plant trees or shrubs specifically to attract birds, it's worth considering just where you're going to plant them, to make it easier to birdwatch, (for example, our pyracanthus bush and the bird-table are outside our kitchen window, so we can easily watch the birds without scaring them.

We plant sunflowers each year for the birds, just a few (each enormous head yields heaps of seeds). We had trouble one year with some voracious galahs helping themselves to this feast while it was still growing, so we hit on a solution. We noticed that the galahs would not be able to get seeds from a flower which had flopped over, and that some of the plants did this naturally. So we collected seeds from those plants, and next year planted them. Hey presto, most of the resulting sunflowers drooped their heads, and we had no more problems with greedy galahs, who, instead had to wait their turn with the other birds!

The best time to watch birds is in the morning, or the evening. Birds, like most other wild creatures, will not come out much during the heat of the day, although they are often around in the cooler months. It's really worth buying one or two bird books so that you can identify birds you don't know. For example, we have 'The Beginner's Guide To Australian Birds', by Rosemary Blamford (Penguin). It's not really a bird identification book, but gives lots of advice for the novice bird watcher. Neville Cayley's classic 'What Bird is That?' and Simpson's 'Birds Of Australia' are two highly recommended texts. We also bought a pair of reasonably-priced binoculars — they do make a difference, especially when you're watching small birds.

It's also a good idea to keep a notebook or diary about the birds you see, to make observations and chart the passage of birds. Using one of these, you can remember which birds to expect and plan for, and you can also make notes to refer back to.

For example, we were puzzled one year by a rosella which appeared to hang around with the crimson rosellas, and was of a similar size but rather differently coloured, with touches of green in its plumage. We wrote it down, looked it up, and found out that it was in fact a juvenile crimson rosella, and not another kind at all. A little more of the mystery of life is teased out in one of those observations, and it's great fun, and gives you a sense of achievement.

Watching birds is an excellent way of feeling at ease in your environment, and it gives great satisfaction to have a family of birds returning year after year — but with new members — to the garden they consider as part of their territory.

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Termites and you

by Bob Rich

Moora-Moora Co-operative, Healesville, Victoria.

TERMITES are not white ants, but social, wood-eating cockroaches. Environmentally, they are very useful beasties. They are on the menu of many other insects, birds and animals. Many useful and interesting species would find it much harder to earn a living if we managed to exterminate termites. Also, huge amounts of the organic matter in dead wood are recycled by them into a form useable by Nature.

Trouble is, some dead wood is put to use by us, and we'd rather not have it recycled into animal and plant food! Houses, fences, railway sleepers and power poles are dead wood to Nature but are very useful to people.

So, we have to protect our timber artifacts, without eradicating termites. The use of DDT against malaria-carrying mosquitoes showed that eradicating a species is impossible, and the attempt does can do massive harm to humans and other animals.

Termite species

There are at least three kinds of termites: subterranean, drywood and dampwood.

Subterranean termites need access to permanent water, and are killed by light (apart from the winged breeders). This is why they live underground and have to build mud tunnels to get at anything above ground.

Drywood termites are not so restricted. There are only two forms of protection against them. The first is exclusive use of timbers they won't eat: naturally resistant species, or timber pressure treated with a poison such as creosote or copper-chrome-arsenate. The second form of protection is annual fumigation of all spaces liable to invasion. This poisons people as well as termites.

Dampwood termites are not a significant danger but some drywood species can be bad news. One exotic species is occasionally found in the warmer regions of Australia. An infested house must be fumigated (at Government expense). Quarantine regulations are designed to keep them from spreading. It would be a major economic disaster if they became more widespread.

Fortunately, New Zealand is currently free from subterranean and drywood termites.

Subterranean termites

We will look at protection from subterranean termites. Until the early 1950s, there were two approaches: prayer and good design. Most houses were built without regard to termite damage. If it occurred, it was treated as an 'act of God', like a lightning strike.

Traditional building techniques where termites are indigenous provide the other approach. Dwellings were either flimsy, temporary affairs which were abandoned before termites would eat them, or built in a way to minimise the chances of damage: earth or stone walls, with timber components exposed and off the ground. Our architecture can use the same principles. (I used them in my house. No, it's not flimsy and temporary, but has earth walls. Timber posts stand on stone plinths and are visible for their whole length).

A disaster sneaked up on us and the rest of the planet in the 1950s. This was the widespread use of DDT and other organochlorine insecticides: aldrin, dieldrin, chlordane and heptachlor.

Organochlorines have nasty effects on human health, as well as on animals. Chronic (long term) exposure to low levels does terrible things to a few people, and most others can suffer a variety of unpleasant symptoms. The trouble is that the symptoms are hard to associate with the cause. They may occur a long time after exposure started, and they can be attributed to many possible causes. Problems include cancers, birth defects, hypersensitivity to chemicals, 'chronic fatigue syndrome', headaches, low resistance to infections, allergies and liver problems.

This is why it took nearly 30 years for such poisons to be banned in agriculture. Their use against termites was permitted even longer, on the assumption that the poison is locked up in the soil under the house. There is a huge body of evidence that this is not so. Organochlorine pesticides are now completely banned in the USA, Japan, and many other countries.

Not, however, in Australia. There are Australian studies showing that poisons injected into the soil under a house *do* penetrate the airspace. Nevertheless, all Health Departments claim that these poisons are safe if applied according to the relevant Australian Standard. Many Councils force owners to use a 'permanent chemical barrier' to protect their house. This is partly because the legal advice is that if an area is declared to be termite-prone, and the Council doesn't require poisoning it, then individual councillors may be liable to be sued by someone whose house had been eaten.

Clearly, there is a need to change the law, and all concerned people should work towards this. In the meantime, thousands of people treat the ground under their houses with a poison which last for about 20 years, penetrates the airspace of the house, has ill effects on people — and provides only short term protection!

Many houses are re-treated annually! No pest control firm guarantees its work for more than a few years (typically, one year) because experience shows that termites can get in despite a chemical barrier placed a few years previously.

Before you buy a block of land find out if you are compulsorily required to poison yourself in an attempt to deter termites. If the answer is yes, you might consider buying elsewhere.

The alternatives

Other chemicals

Organochlorines are banned in the USA. The approach there is, predictably, to switch to a different group of chemicals — the organophosphates like chlorpyriphos. Tests have shown them to be less dangerous to mammals.

"Dr John French of the CSIRO has tested this Basaltic Sand Barrier with Australian termite species, and found it to work. The technique is now accredited for use in Victoria. It involves placing 160 mm of the sand under a concrete slab, or under and around posts and stumps. It should provide protection forever (possibly excepting the effects of a major flood)."

Organophosphates cost more than organochlorines, and last for 'only' 12 years instead of 20. Because of this, experts advise installing pipes to enable regular re-treatments under a slab. This is a confidence trick: a 12 year persistence makes no difference if the 20 year stuff has to be reapplied every few years!

I oppose the use of organophosphates, still on health grounds. There are two reasons: the limitations of toxicity testing, and synergy.

Toxicity testing

A chemical is tested by feeding it to various small animals such as rats, mice and hamsters. Toxicity is defined in terms of the dosage producing given effects (such as cancers and abnormal births). If the effects occur in two or more species, the chemical is considered toxic. This is not very nice to the animals. Also, the logic is faulty: it can show up toxicity, but can't prove the lack of it. No other species is exactly like humans. Maybe the stuff is toxic only for one species — us! Maybe it is non-toxic at the dosages used for five out of the six species tested but a seventh would have been badly affected. Maybe there are dosage-time relationships which weren't tested. At best, this kind of evidence is only suggestive of relative safety.

Synergy

The second problem is synergy: the interaction of two chemicals. A poison may have no effects because it is detoxified within the body by a liver enzyme. Another chemical may have no bad effects at all, except that it inactivates just this enzyme. Ingest the two together, and you get sick. One of these chemicals may have entered your body years ago, and then was stored in the fat. A change in your circumstances might release some of it just when you are exposed to the other substance, and you're in trouble.

We live in a devil's brew of chemicals, mostly man-created so that we have no specific defences against them. We have to rely on general defences: elimination through the kidneys, attack by liver enzymes, inactivation by storing them away in fat. There is no way of checking in advance for all the millions of possible interactions between chemicals within the body.

We have a choice: to prove a chemical harmful through 30 years of use, or to minimise the use of potential poisons by every possible means.

Physical barriers

Researchers in the USA showed in the 1950s that termites find it hard to penetrate some sand layers. This research stopped when the chemical approach took off. More recently, Hawaiian scientists developed a commercially useable sand barrier which stops termites. The basalt sand is too hard to chew apart. Grains are an evenly graded size which is too large to be carried away, yet small enough to shift around in response to tunnelling attempts. Dr John French of the CSIRO has tested this Basaltic Sand Barrier with Australian termite species, and found it to work. The technique is now accredited for use in Victoria. It involves placing 160 mm of the sand under a concrete slab, or under and around posts and stumps. It should provide protection forever (possibly excepting the effects of a major flood). It is expensive — but not as dear as yearly retreatments with a persistent insecticide. It is far cheaper then the medical bills associated with cancer, or even chronic fatigue syndrome.

Suitable sand is supplied by EB Mawson & Sons Pty Ltd, 141 King George St, Cohuna, Victoria, 3568.

The cost of the Basaltic Sand Barrier is partly due to the careful sifting necessary, and partly to transport over long distances. A Western Australian researcher is developing a fine mesh stainless steel screen which can be placed under a slab or surrounding stumps or posts. This system is still to be proved.

Monitoring

Monitoring systems include ant caps on stumps. Termites can't go through, so they have to build mud tunnels around it. Occasional (say six-monthly) inspections will reveal the tunnels. The whole termite colony can then be killed before there is too much damage. Trouble is, very few people monitor their ant caps. The crawl space is small, dirty, may have spiders and snakes — and may have been poisoned with a persistent insecticide by a previous owner. Who wants to go under there? So, usually the first sign of termites entry is when a skirting board falls apart.

It's easy to install an inexpensive monitoring system which surrounds the house, and is quick and convenient to inspect. I have installed such a system, using advice from Dr John French.

The system is a pipe around the house, buried 150-200 mm deep. It has lots of holes drilled in it, and a fibrous substance (such as cardboard or sisal string) threaded through. At regular intervals, it's joined to plastic bait boxes filled with well-wetted corrugated cardboard (which is a termite delicacy).

John French uses 20 mm plastic conduit pipe with long strips of corrugated cardboard threaded through it. His bait boxes are above ground, black painted plastic lunchboxes, joined to the underground pipe via a T junction.

I choose to live below the "poverty level", and like to recycle garbage. So, my version is made from old half inch garden hose (with lots of holes drilled in it). I threaded this with thick sisal string. This is the only shop-bought component, used because there was no way of pulling cardboard strips through a kinky hose. Bait boxes are old 2 litre ice cream containers, buried so that the pipe enters near the top of the box (and filled with the well-wetted cardboard). Small holes drain water at the bottom, lots of holes let in water through the lid. A large flower pot with soil in it stands on the lid. It keeps out light but lets through water. In this way, the cardboard can be kept permanently wet. Inspection takes a few seconds.

The only difficulty in setting up the system is threading the pipe. You push fencing wire through, tie the string (or tape the cardboard strip) to it, and pull it back out again.

Termites will seek out the water and cellulose with the pipe and bait boxes. You will detect them long before they get to your house.

I first tested my system out on a small scale, near a known termite colony. It works.

What do you do if you find termites? Get an old plywood box. Rip holes in the bottom, bury it where the termites will find it, fill it with corrugated cardboard, and soak it and the ground around it. Keep the inside dark. It should be full of termites in three days. Get a licensed pest control firm to treat them with arsenic trioxide. They can get directions from the CSIRO if they are unfamiliar with the method. A tiny quantity will wipe out a whole colony.

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A step in the right direction, but not far enough

Use of the controversial organochlorine pesticides heptachlor, chlordane and aldrin will be significantly reduced under new measures approved by the Western Australian State Government in late November.

According to Environment Minister, Mr Bob Pierce, the measures will be the most stringent in Australia, although the Government is not prepared to ban the chemicals outright.

Cabinet received 63 submissions on the issue of using organochlorines as termiticides, and a final report from the WA Advisory Committee on Hazardous Substances.

Some of the Committee's key recommendations endorsed by Cabinet are:

•wall cavity treatments with termiticides will be banned. This procedure is considered expensive and unnecessary and can lead to traces of termiticides leaching into homes.

•The Government will amend building regulations where necessary to reflect a reduced emphasis on the pretreatment of new buildings with organochlorine termiticides.

•Organochlorines will not be used for post construction treatment except with Health Commission approval.

•Re-treatment of buildings using non-organochlorine chemicals cannot be carried out within seven years. This will prevent overservicing and the excessive use of termiticides.

•Pest controllers will be required to upgrade their treatment equipment to reduce occupational exposure and ensure only correct doses of pesticides are used. They will also have to maintain comprehensive log books.

•Substantial penalties, including deregistration will be introduced for persons failing to comply with these and other new controls.

The Minister said that the CSIRO is currently developing a research field site near Perth for testing alternative controls.

"Some local government authorities are already accepting alternative, non-chemical methods for termite control for homes and I support these alternatives," said Mr Pierce.

He said the Health Department would produce a new brochure advising householders of the hazards associated with chemicals. Pest controllers may be required to supply these to owners and householders before treating homes.

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Pesticide residues higher than in USA

Tests on human blood, urine and fat at a private laboratory in Melbourne show significantly higher levels of pesticide and industrial solvent residue than in comparable samples in the United States.

Mr Trevor Norris, Manager of the Analytical Reference Laboratory's national analytical group, based in North Melbourne, said Australians appear to be carrying organochlorines at five standard deviations above the average levels in Americans.

This is an extremely significant difference he said. It is too early to judge the effect on health, but it was the "gut feeling" of researchers that it could be linked to diseases such as chronic fatigue syndrome, said Mr Norris.

The laboratory is an independent group and most of the human biological tests are referred by doctors treating patients.

Mr Norris said that although the laboratory was regularly finding high levels of pesticides and solvents it was too early to draw conclusive links to health effects.

"We have a whole lot of loose ends, like spaghetti. But we have a gut feeling that it is related to clinical symptoms of ill health. There is a lot more work and lots more sampling that needs to be done."

He said the laboratory regularly found high levels of chemicals such as heptachlor and polychlorinated biphenyls in mothers' milk.

Mr Norris said more than 90 percent of blood samples analysed at the laboratory from people diagnosed by their doctors as suffering chronic fatigue syndrome had very low levels of natural killer cells — white cells that played a key role in the body's immunological defence.

"Every person in Australia will have some pesticide residues because our food chain is irreversibly poisoned with organochlorines. This is a legacy of injudicious use of chemicals like DDT in agriculture in the 1950s and 1960s. We're stuck with it.

"But we still have a national standard for termite-proofing houses which saturates the ground with organochlorines like dieldrin. Who knows where the dieldrin goes then?"

—The Age.

Summer Horticulture Workshops

The Australian Horticultural Correspondence School is conducting its annual summer workshops at the school in Lilydale, Victoria, from 15 to 17 January. The three one-day workshops will be: a Propagation/Nursery Workshop, a Landscaping Workshop, and an Inspection Tour of Gardens/Nurseries of the Dandenong Ranges. The workshops are designed for enthusiastic amateurs and those already in the horticultural industry. The workshops will involve talks and practical sessions by expert tutors supported by slide and video presentations. The course hours are 9 to 5 pm, and morning/afternoon teas, lunch and course notes are included in the fees. The fees are for any one day: $95 (non students), $75 (AHCS students) or $225/$170 for all three days. The AHCS can be contacted on (03) 736 1882, 264 Swansea Rd, Lilydale, Victoria, 3140.

The Australian Cotton Foundation's 100 percent cotton-filled pillows.

The Australian Cotton Foundation, which represents the cotton growers of Australia, has recently released cotton pillows filled with 100 percent cotton. Up until now it has been virtually impossible to buy such pillows.

"The idea evolved after we received a constant stream of inquiries from people suffering severe allergies and total allergy syndromes who cannot use any of the currently manufactured pillows," said Maree McCaskill, Executive Director of the ACF.

"The Japanese have long recognised the benefits of cotton futon beds and 100 percent cotton pillows," she said.

The pillowslips are firstly washed with vinegar and washing soda to cleanse them of any detergent residues and then filled with the raw cotton. People wishing to order the pillows, at $25 each, can contact the ACF at PMB 24, Post Office Marrickville, NSW, 2204; telephone (02) 558 2260.

Geobiology — The Holistic House

by Jean-Marie Gobet, B. Arch.

Trigg, Western Australia.

HAVE you ever found your child curled up in a corner of the bed? Have you ever noticed that your cat chooses particular spots to sleep? Does your dog seem systematically to avoid certain areas? Do you feel more comfortable in certain parts of your home than others? Are you affected by recurrent migraines, allergies or insomnias you can't explain?

The relatively new art and science of geobiology suggests answers to questions like these. It is new in the sense that it strives to analyse age-old building traditions and to support them with recent discoveries of science. It tries to understand the relationships between the local environment and the health of living organisms by integrating the studies and discoveries of many specialised scientific subjects such as astrophysics, geophysics, geology, hydrology, biology, electronics, architecture and traditions both local and collective.

The tradition

Since the earliest time in history, a wide set of parameters and rituals have determined suitable building sites. In China it was defined by Feng Shui, the art of reading the landscape and its influence on an area. Mountains, lakes, rivers and forests were all charged with quantities of energy (Ch'i) according to their shape, size and disposition, and the relationship between them affected and defined the suitability of sites for particular uses.

According to the architect Vitruvius Pollio, before building a city, the Romans would let a herd of cattle live on the land for one year. Then after having slaughtered them and inspected their entrails, they would decide if the chosen site was healthy or not.

Throughout history the foundation of a city or a public building was the occasion of special rituals and dedications to gods, planets, or saints. The symbolic aspects of the consecration were most important. An official laying the first stone of an edifice is the remnant of this tradition. The exact moment when the first stone of Cairo (Egypt) was laid corresponded with the ascension of the planet Mars (in

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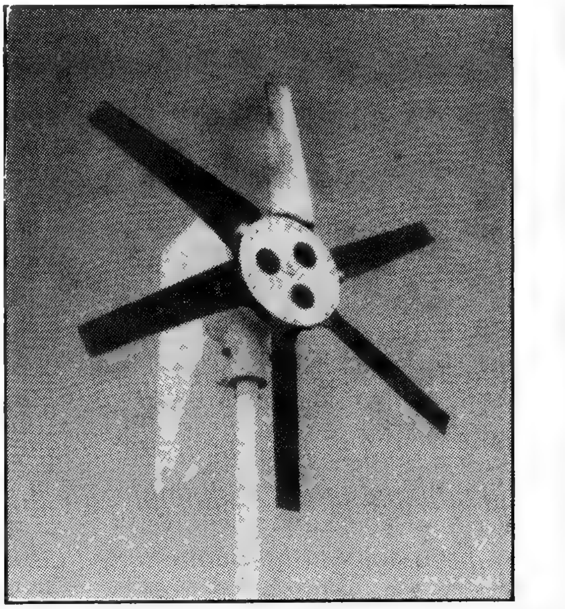


Arabic El Kaher: the victor). The astrological theme which defines the cosmic affinities of each individual was applied to architecture — the moment of birth of a construction corresponded to laying the first stone.

The start of work on the Escurial Palace, the centre of the Spanish Government, was appointed with the entrance of the sun and the moon in Aries, which presides symbolically to the highest political and military ambitions. Furthermore, the building was dedicated to St Laurence (martyr tortured on a grille) and its plan assumes the shape of a grille.

The orientation of an edifice, its position in relation to the stars, the sun, the planets and the obscure tellurian forces, was recognising the hopes for its higher aspirations — what the ancients called the pillar of the world or "Axis Mundi".

It was often symbolically illustrated with the image of an archangel (the cosmic or positive light forces) striking a dragon (the tellurian or negative obscure forces) or as Apollo slaying the serpent Python. The Abbey of Le Mont St Michel (Normandy, France) is positioned on the axis 64 degrees off North. This direction faces towards the sunrise of the 8th of May, traditionally the St Michel day of spring. The opposite direction shows the sunset of the 6th of August: the Transfiguration of Christ.

The ancients understood architecture as the materialised image of a natural and invisible order. The Egyptian or Mayan temples, the Chinese pagoda and the gothic cathedral represented on the material level the more subtle realms from which they emerged.

"These traditional practices and the great body of knowledge from which they came have been discarded slowly with the arrival of the Industrial Age, giving way to 'cost efficient' building practices and the use of toxic products. The times seem long gone when any stonemason knew it was unwise to build on the 'veins of the dragon', as the Chinese and the Celts called the streams of tellurian forces."

In the Alps of Switzerland a few older carpenters are still inspired by respect for the forest and the wood. The trees are felled only during a very specific period, between December and February, and under the descending moon. The timber is seasoned for up to 11 years depending on the nature of the wood and its future use.

When building, each beam, rafter and stud is carefully positioned according to the original direction of growth of the wood. A tree grows from the Earth (negative pole) to the sky (positive pole), thus rafters and studs will always be fixed to have their positive pole towards the sky. The beams would have their positive pole towards north or east, to ensure a natural flow of energies between the construction and the biosphere.

The finished structure is always blessed in a small ceremony when a decorated sapling is nailed to the pitch of the roof. Many chalets, some of them up to 400 years old, are still standing in perfect condition, never having received a coat of paint or wood treatment.

These traditional practices and the great body of knowledge they came from have been discarded slowly with the arrival of the Industrial Age, giving way to 'cost efficient' building practices and the use of toxic products. The times seem long gone when any stonemason knew it was unwise to build on the 'veins of the dragon', as the Chinese and the Celts called the streams of tellurian forces.

The natural field of radiations

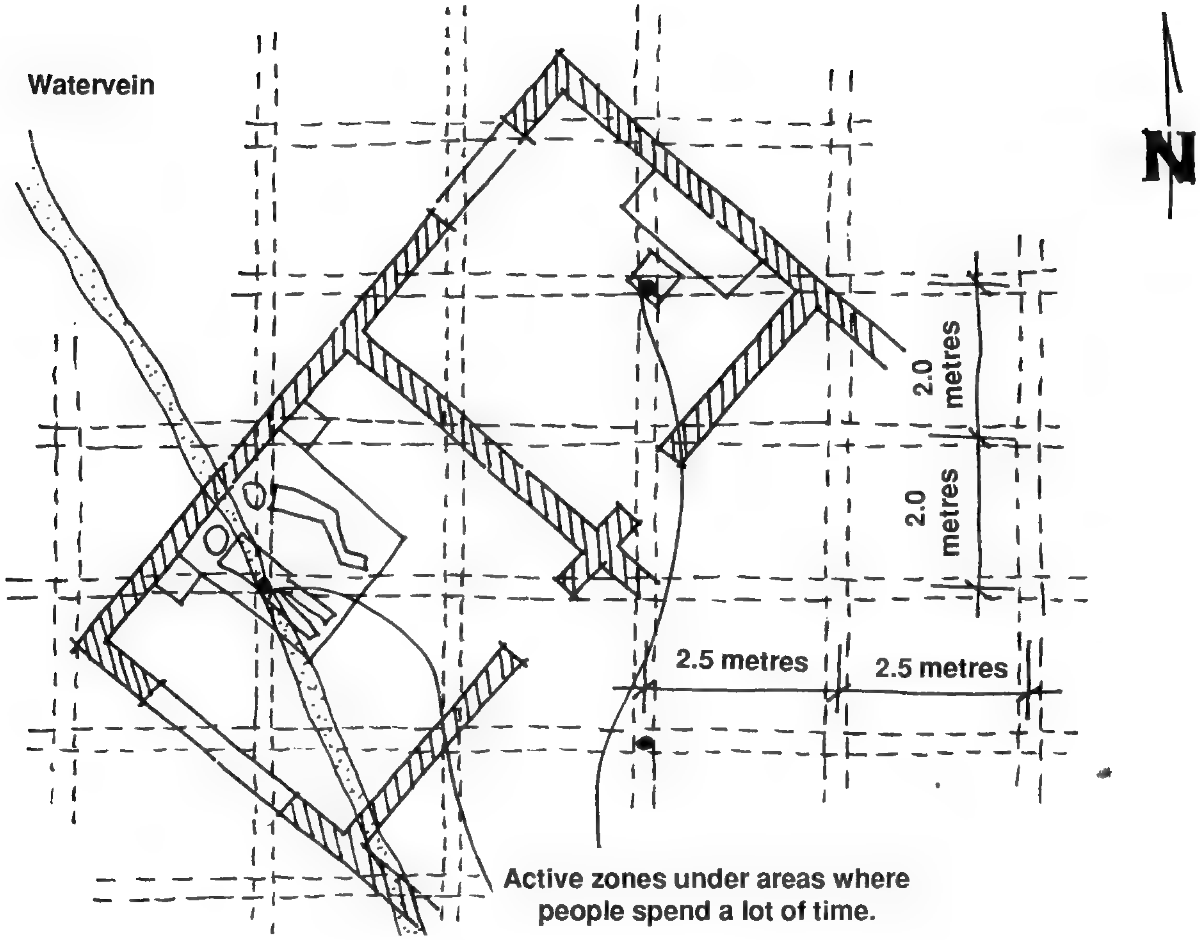
A healthy house should not cut its occupants from the natural influences of Earth and heavens. It should be the vessel where these energies can meet and be transmuted for the benefit of humans. To obtain this, a construction must keep as much of the original natural radiations of the environments as possible. Humanity has evolved within this field of radiations for over 40,000 generations and has developed a highly sensitive nervous system. Modern technology and new housing techniques have considerably deprived us of the contact with Nature for only two generations. There has been little time for biological adaption.

The influences of the heavens include solar radiations, the radiations of planetary bodies and, to a lesser extent, the stars. The intensity of these radiations varies according to latitude, altitude, weather and solar activity.

The influences generated by the Earth are generally from the Earth's magnetic field and local geological characteristics. Our planet, being a great magnet with its positive and negative poles, is surrounded by its own magnetic field (the geomagnetic field) pulsating at the rate of 7.8 beats per second. The intensity of this field varies according to time of day, and place. Magnetic disturbances have been observed over underground water streams and geological faults.

Recent research in Germany and France shows that certain types of massive construction can reduce the effects of the geomagnetic field to the extent of inducing different health problems such as heart diseases. The German physicist Robert Endros studied this question with Professor K E Lotz of the School of Architecture of Biberach (in West Germany). Their analysis of 400 deaths due to cancer revealed that 383 cases were related to dwellings over geological faults, underground waterveins and disturbances of the natural geomagnetic field.

A well known and documented geological cause of disease is the radioactive gas radon 222 produced by the disintegration of uranium 238 in uranium rich minerals. It is found in greater concentration in well-insulated and poorly ventilated spaces.



The Hartmann Grid

In the 1930s, Dr S Jenny in Aarau (Switzerland) experimented with the effects of geological faults and underground streams on 25,000 mice for a period of 12 years. Mice in cages placed over a perturbation of the geomagnetic field became agitated, gnawed their tails and even ate their offsprings, sometimes developing cancerous tumours. When placed over a neutral zone they became more settled. If a cage was placed partly over such a perturbation (geopathic zone) and partly on a healthy zone the mice preferred to stay on the latter.

In France beekeepers place hives over underground water veins. Such hives can produce up to three times more honey than hives positioned a few feet away, but according to these beekeepers, the life span of these bees is considerably shortened and they are more aggressive.

The Hartmann grid (H grid)

For some years researchers like Dr Hartmann (Director of the Research Committee for Geobiology, Eberbach-Waldkatzenbach-waldbrunn), Dr Palme, Professors Endros, and K E Lotz and many others have studied the undeniable influences of electromagnetic fields on living organisms. According to the research of Dr Hartmann the geomagnetic field is composed of active and neutral zones, the active areas being lines 21 cm wide with the neutral zone lying between the lines.

These lines form a north-south and east-west grid. They are about 2.0 m apart on the north-south axis and 2.5 m apart on the east-west axis in the temperate zone.

The crossing points of these lines are considered to be unhealthy if one is to remain over them for long periods, as in a bed or at a work station for example. The regularity of the H grid can also be affected by man-made disturbances such as high tension power lines and roads.

The effect of a crossing, or knot, in the H grid can be amplified by other local characteristics such as an underground stream or a geological fault, making a spot potentially dangerous. According to Professor Endros trees growing on the crossing of the grid are prone to lightning strikes, especially if they are near or over an underground stream. Most trees or plants showing deformities are found on such 'knots' of the H gird. On these the Romans used to build sham wells dedicated to Jupiter and consecrated to

A timber chalet built in 1666 in Saanen, Switzerland, still in superb condition.

'Fulgur Conditum' (buried lightning).

Animals and very young children have not lost their instinct to feel if a place is healthy or not. In the morning, one can often see children cramped into one side of their beds, oriented differently from when they were tucked in. It is wise to see if the bed is well positioned. Sensitive adults will not sit in a particular spot often without being able to explain why they feel uncomfortable. Animals in pastures will avoid a disturbed zone to the extent that you can follow the path of disturbance by looking at the area that's been grazed.

Throughout history animals have constituted the economic base of rural properties and the greatest care has been taken to build healthy shelters for them. We see very few old farm buildings situated on a disturbed area. Most of the cases of diseased animals observed by Professor Endros living over geopathic zones, have been observed in new installations built in recent decades.

It is interesting to observe that cats and ants will thrive over a spot submitted to radiation but dogs or mice will avoid them. According to Professor Endros the statistical study of Sudden Infant Death Syndrome (SIDS) shows high differences in frequency depending on the location, which led him to the hypothesis that SIDS may be caused by local factors. Further studies in German and American cities by Egon Eckert of Newton showed that most cases were distributed along high power lines. The conjunction of high power lines, underground water streams and H grid crossings should be considered as extreme perturbation of the ambient field. It should be essential to have a correct positioning of beds in places where people have a diminished resistance and health, such as hospitals.

According to the Institute of Geobiology of Lausanne (Switzerland) 30 percent of the patients studied showed signs of improvements after having their beds shifted from active zones. Describing the Cairo Hospital built in 1823 by Sultan Galaoun, the historian P d'Avenne explained the importance of the building: "The doctors took more care of the air than of the food, because one eats now and then, but one breathes continually. The patients were placed in large or small apartments oriented towards north or south, heated by aromatic fumigations or cooled by different means according to the nature of their diseases."

"An important part of the edifice was reserved for mental patients of both sexes who were treated in vast porticoes made healthy and pleasant by fountains and running streams of water whose freshness brought rest and wellbeing."

The structure of geobiology

Geobiology aims to provide the information for us to reproduce a habitat as near to natural living conditions as possible, taking into account the need for comfort provided by old and new technologies favourable to the environment. It strives to define and examine the numerous elements influencing the quality of our home. To diminish or enhance the salubriousness of the house the accumulation of many factors is required. These elements can be roughly ordered in three interdependent levels.

Physical level

The physical level deals with all the known effects related to the quality of the ground (such as geological faults, water streams, radon) to the quality of the location (that is, air pollution, noise) and the quality of the construction.

We have slowly come to realise the great influence that building materials have on our health, both physical and psychological. You can easily imagine yourself stroking a piece of wood, feeling its softness and warmth. The tree has grown from the energies of the Earth, the water and the cosmos. It radiates a message of life, very different from the message of a piece of polystyrene or plastic. But even the best of materials can be killed by toxic chemical treatments which are slowly releasing poisonous emanations such as lead, cadmium, formaldehyde, phenols and organochlorines. They are known to cause nausea, headaches, insomnia, asthma, brain damage and even cancer.

Energy level

The energy level includes the positioning of the house on the Hartmann grid and other tellurian currents, electromagnetic pollution and the Faraday Cage Effect due to bad earthing of electric installations, reinforcement of concrete slabs and steel frames.

In recent years the rapid proliferation of artificial sources of radio-electric frequencies has become a cause for concern. It has surpassed many times the production of natural sources. According to a German specialist Wolfgang Volkrodt, electromagnetic pollution has increased a hundred times during the past 30 years.

Ten to fifteen percent of cancers affecting American children could be caused by low frequency electromagnetic fields around high voltage power lines. This is the astonishing affirmation of the 'New York Power Lines Project'. This study group was formed by the commission responsible for the power grid of the State of New York.

Symbolic level

The symbolic or spiritual level, which is the least recognised, is also the most important because it defines the quality of the whole. Most of us can feel clearly the difference of ambiance in extremes (for example, between abattoirs and churches) and be strongly affected by them. Persons endowed with a greater sensitivity will perceive subtle differences that would nevertheless unconsciously influence us. According to B Merz (Institute of Geobiology of Chardonne, Lausanne, Switzerland) just as a place can make us prone to disease or depression, another can lift us to more subtle levels of vibration, strengthening our body and spirit. Such places were sought after throughout history and held as sacred.

Some are natural wonders like Uluru (Aboriginal people have long known this), the Grand Canyon, the Matterhorn and countless other places on this planet which inspire the millions of modern pilgrims we call tourists. Others are man-made poles of attraction built on powerful sites by architect-priests obeying a sacred tradition, like the pyramids of Egypt, the statues of Easter Island or many gothic cathedrals. The site of the Chartres Cathedral in France was already considered sacred by the Celts.

How to choose a home

Most people know intuitively what parameters would enhance or diminish the quality of their life when looking for a house. However many important factors are overlooked in favour of less geobiologically significant elements.

After derm and clothing, the house is our third skin and a very important factor in keeping healthy. We should remember that when choosing a house or a site we are defining our future quality of life. Geobiology proposes coherent and structured ways to establish the important

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criteria bearing on this choice. It suggest the following rules of thumb.

Surroundings

- Harmony between Nature and the inhabitants, flowery gardens, trees absorbing dust and producing oxygen.
- Compact and hard ground, stony or sandy.
- An atmosphere rich in negative ions, near parks, forests or ocean.
- An orientation towards north and west for the living area.
- An area with little or no noise, away from high power lines and transformers.
- Locating the perturbated zones or having them located.

House

- The construction materials should be of high natural quality such as wood, stone, bricks and tiles.
- The dimensions should respect human scale, with a good relation between height, width and length.
- Insulation should be with cork, coco fibre or mineral wool.
- Use non-toxic paint, and take notice of the influence of colours (chromotherapy).
- With electricity, avoid transforming the bedroom into a research laboratory with TV, radio and other electrical appliances. The ideal solution would be to be able to switch off the bedroom area for the night to avoid long exposures to electromagnetic fields (the effects of these fields can be enhanced by metal beds).
- Floor coverings should be made of natural materials such as terracotta tiles, cork, wood, woollen carpets or plant fibres.
- It is not recommended to have a bedroom situated over a garage. The metallic mass of cars is a strong agent of disturbance of the natural magnetic field.
- It is best to sleep with your head pointing north to be aligned with the geomagnetic field.

Conclusion

The Ancients translated in their stone temples the great laws of the universe. They all based themselves on the same principles using the cosmo-tellurian forces. Their dynamic complementarity generated a third vital element for humanity: the evolution of all things. We must now rediscover these laws hidden in each of us and communicate them to our constructions, from the most modest to the most sumptuous. Such a realisation is possible on three levels.

1. The technical level — products of reason using the laws of mechanics, physics, chemistry and astrophysics to determine the choice of materials and the site.
2. The harmonic level — the human soul rejoicing in the vital movements of cosmic cycles.

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3. The symbolic level — the knowledge enabling the elaboration of the "Axis Mundi" and humanity's spiritual matrix. This level constitutes the intimate ties giving the other two levels their real grandeur.

When these three levels are balanced the building becomes an architectural medicine, a physical, psychological and spiritual harmony.

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Corridors of power

by Alan Whitehead
Mullumbimby, New South Wales.

FENG SHUI means 'wind' and 'water' (the Shui is pronounced 'schway') but refers, in the deeper sense, to natural energy (albeit invisible) of almost any kind. The life-breath of the Earth is Ch'i. Good Ch'i provides good Joss.

The purpose of this article is not to explain Feng Shui in any detail, but to describe how my wife and I tried to employ its principles in land selection and owner-building. Before we became owner-builders, we went on a pilgrimage along the unbelievably rich Path of the Dragon (the spine of which projects from Lhasa to our Great Dividing Range), right up through the four Chinas, to Tibet. Apart from having a marvellous time, we attempted to make the inscrutable, scrutable — the imponderable, ponderable. We failed. We still don't know *what* makes Feng Shui work, we only know (along with a billion or so Chinese) that it does.

Good Feng Shui and good sense are always compatible — so a north-facing aspect for both house and land was a matter-of-course. North is good Ch'i in the Southern Hemisphere. The creek was not a happy accident, we simply wouldn't consider a property without natural water of some kind. And the mountains? Well the Chinese consider elevated landscapes to be focal points for beneficial Ch'i, so the Nullarbor Plain was out for us!

Wildlife brings happy Feng Shui, so we retained all the trees on the property, and planted more. Especially trees with flowers and fruit which attracts birds and animals.

Ponds are good Ch'i — our's was built by our landscaper son with its lunette shapes arching away from the house as recommended (similar to our creek). In the pond are goldfish, which are excellent life-centres according to the Masters. That's why so many Chinese restaurants have bubbling fish tanks. Those gleaming goldfish are reputed to attract more 'gold'. Our's attracted a cormorant that ate the lot!

Orientation

House orientation should always be away from neighbours, traffic and the outside world generally. A good Feng Shui situation is to face a view, an intimate courtyard or private gardens. We found that all of our psychic and otherwise 'trespassers' came from a quadrant south-east around to south-west, so we turned our back on all that. Different to the conventional Aussie house siting where you proudly face the street, no matter what!

We became aware of Feng Shui sight-lines. One set of windows was designed to provide a framed landscape of green tranquility, with no evidence of man's structural obscenities to distract our meditations — then someone strung power lines across the back. Oh well, back to the tree nursery.

The lines, though not obtrusive in themselves, nevertheless create a visual focal-point because of their incongruity. Try convincing an electrical authority of that!

Our orientation calculations began with a magnetic compass, but later we sensitised ourselves by using what one Black Hat Tibetan Feng Shui expert called the 'internal compass' — with practice it really works. You can become conscious of directional impulses you might otherwise have ignored. For instance, we slowly became aware of a powerful 'corridor' of energy streaming from the south-east to the north-west. Both directions have long-range Feng Shui sight lines. South-east is Cape Byron, Australia's most easterly point and a telluric power centre *extaordinaire*. North-west is Mt Warning — a sacred sight for both Aborigines and Captain Cook alike!

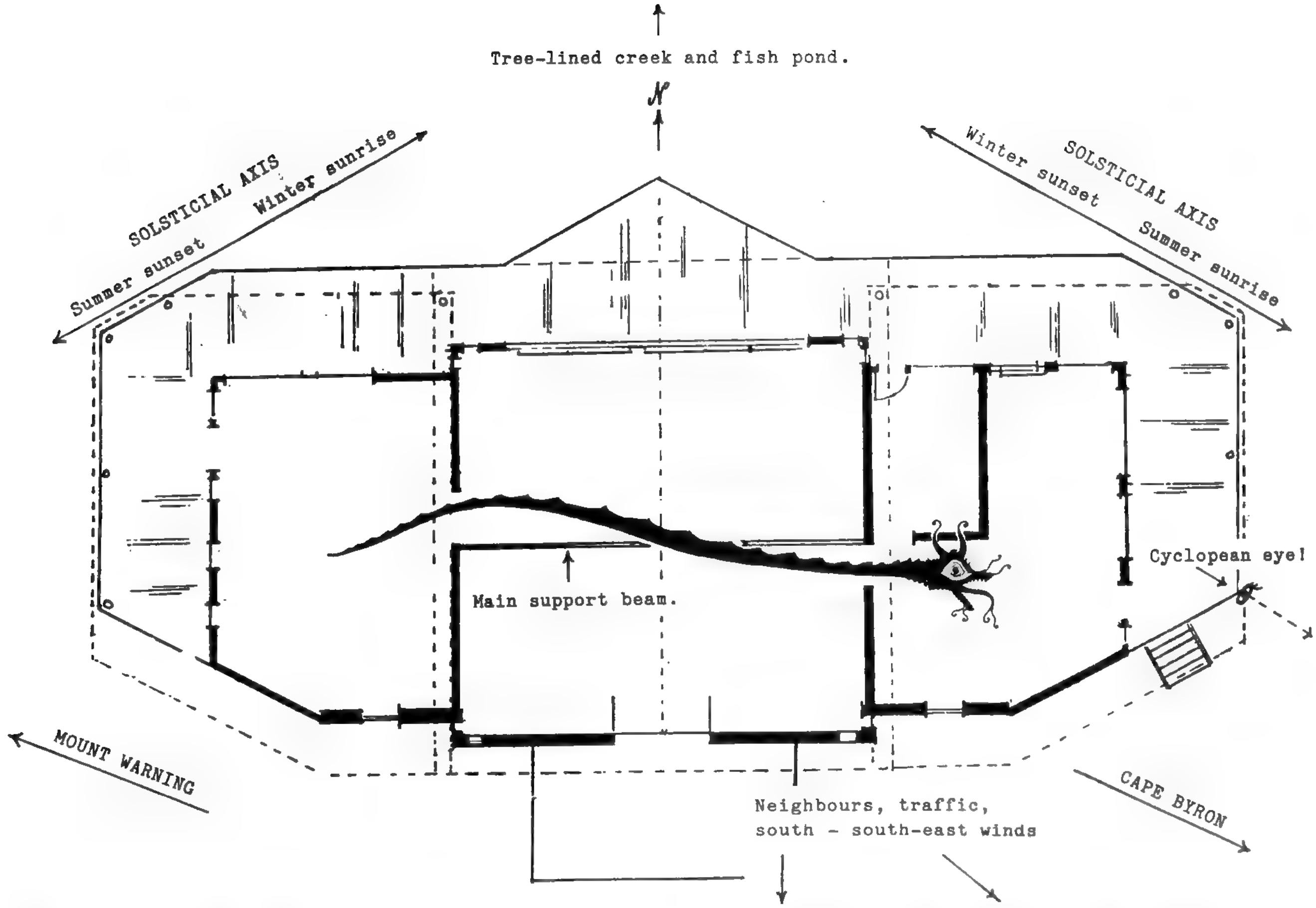
Then we realised that the birds also knew about this Corridor of Power. At least 70 percent of travelling birds (not the local garden residents) pass over our property on this marvellous axis — this spiritual conduit. Our local Council in Byron Shire has become increasingly sensitive to these Principles of Harmony in its planning policies.

Our Feng Shui studies have shown us that a well-designed house, living in tune with its resident Nature-forces, actually enhances the Feng Shui of an area. That's why there is usually a tiny but beautiful temple strategically sited in those wonderful mountainscapes in Chinese silk paintings. In fact one function of the tall lightning-rod pagodas is to attract positive Ch'i to a whole area.

Excavation

Any excavation or penetration of the Earth should be carried out with great sensitivity. Deep-penetration foundations 'stab' the Dragon, so we placed our house on shallow concrete footings which, in elevation, follow the contours of the land. We've never had a bulldozer on the place.

Symmetrical houses are supposed to attract helpful Ch'i — hexagons, circles, even squares. We chose a long rectangle, but shaved off the corners to create an I Ching form — the octagon of the Book of Change. This 'smoother' perimeter (Ch'i doesn't like corners) also provides a kind of solar clock. The corners were cut off to correspond to the solsticial rising and setting in summer and winter — cosmic physionometry. If that doesn't attract good Ch'i, what will? The Great Wall of China, a 2300 mile Serpent/Dragon was built not only to repel invaders, but to harness Feng Shui on a national level.



Internal considerations

Inside the house the use of Feng Shui detailing becomes quite explicit, but a few examples may show the kind of thinking used to design rooms, entrances and structural elements. Load-bearing beams are a problem — they create a 'weight' on the heads of anyone under them. We had several, so we made sure that beds, desks and lounges were not directly underneath.

We tried an activity under a main beam, and then repeated it in another part of the room. The results might be, as some sceptical readers would suspect, a self-fulfilling conclusion. But there was undoubtedly a difference and I would never do a painting under that beam again.

Mirror makers enjoy a roaring trade in China, and Feng Shui consultants use mirrors all the time to reflect bad Ch'i. We had a particularly obtrusive activity streaming from beyond our borders right into our kitchen. We placed a small, round mirror (highly recommended) on a post facing the trespass, and within a week not only did the quantity of the intrusion seem to diminish, but our emotional reaction to it as well. We feel safer behind our unblinking cyclopean glass eye, which even invigilates for us when we're not home.

Maybe we're kidding ourselves? Okay, but it sure feels better than when we weren't. Black Hat adepts refer to this 'irrational' Feng Shui as Chu-shr. The 'rational' solution to problems (like asking nearby 'head-bangers' to turn down their music) is called Ru-shr. They maintain a success rate of 70 percent with Chu-shr — and 10 percent with Ru-shr! I'll support that.

We had designed a large, square room with doors on opposite walls exactly facing each other.

"Good Feng Shui hates to move in straight lines," said the Man. So we offset the doors, requiring us to meander a little when crossing the room — the difference is noticeable.

The Orient is still a world of mystery. My otherwise accepting wife can't quite come to terms with the fact that she was born in the Year of the Dog. "It's fine," I tell her, "Not as good as a snake though."

I'm a Snake, and a snake's close enough to a dragon, isn't it?

***Psssst!* . . . Good time of year to drop a brick in the toilet cistern to reduce household water consumption.**

Even if you're on town water it's a positive contribution to conserving resources and reducing the need to build new dams.

Homemade drinks for a long hot summer

by Jackie French

Braidwood, New South Wales.

COMMERCIAL cordials are sweet and bland. Soft drinks have fizz and no flavour. Only homemade drinks still taste of sun and fruit and summer.

Soft drink beers

We made ginger beer when I was a child, with bottles exploding over the laundry (use corks, not screw tops) and a party of school friends getting mildly drunk after a hot week's brewing. Nowadays I don't use so much sugar, and the brew isn't so alcoholic. Other 'beers' are as good as the classic ginger beer, or even better. If you don't care to make a plant (which is just captured wild yeast) use baking yeast instead.

Note: clear, pale honey can be substituted for sugar in these recipes. Stronger honey can also be used but your drink will taste of honey, not fruit.

Fizzy lemonade

Take three cups of strained lemon juice and the grated zest of six lemons — make sure there is no white or the lemonade will be cloudy. Bring it the boil with one cup of sugar and nine cups of water.

When it's tepid add a teaspoon of dry yeast. Put the lid on the pan, leave for 48 hours, and bottle. Let the pressure out ever day. Use corks, not screw top lids. This should be ready in about a week. If it is not fizzy or it's too sweet wait a few more days.

Ginger beer

2 cups sugar
4 lemons
16 cups water
1 tablespoon grated ginger
1 teaspoon of dried yeast.

Slice the lemons, unpeeled, and boil them with the ginger till soft. Cool to wrist temperature, then add the yeast and sugar. Leave the lot for 48 hours. Bottle. Release the pressure every day. The beer should be ready in a week. If it tastes too sweet leave it a few days more.

Passionfruit beer

Take the pulp of 10 passionfruit, add four cups of water and a third of a cup of sugar. Boil, strain, and add a teaspoon of dried yeast when it's tepid. Proceed as for fizzy lemonade.

Cordials

Cordials used to be taken 'for your health' as well as for taste — to build up strength after illness or for a queasy stomach. It's only with commercialisation that a 'cordial' is just another sweetened drink.

Cherry essence

Boil one kg of unstoned cherries with one kg of sugar and the juice of six lemons, with as little water as possible to prevent burning, for half an hour. Bottle and seal. This will be jam-like.

Mix a spoonful with water to a paste, then add the liquid gradually. It is an excellent cordial, a good keeper, and worth the trouble of mixing up.

Cherry cordial

Take equal weights of dark red cherries and sugar. Crush the cherries and their stones. Add the sugar. Leave overnight. Strain through a clean cloth. Keep it in the fridge till it's needed. The finely grated rind of a lime or lemon is a good addition to this drink.

Eliza Acton's portable lemonade

Grate the zest of a lemon — no white at all. Add an equal amount of castor sugar and the strained juice of the lemon. Keep it in a sealed jar in a cool place and add water as needed. I find that in hot weather, even in a cool cupboard, this only keeps a week, though it will keep for much longer in winter or in the fridge.

Green ice

lemon or lime zest
castor sugar.

Rub the zest off six limes and six lemons with a very fine grater. The peel should be very fine — almost liquid — with no white at all. Add an equal amount of castor sugar. Mix well and seal.

After a few days the mixture will be semi-liquid and oily. Use a dessertspoonful in cold water as a cordial. Add it to cakes and biscuits instead of lemon juice or essence. Green ice keeps for months in a sealed container. Once opened it should be used at once or kept in the fridge.

Lime juice syrup

1 kg sugar
2 cups lime juice
2 cups water
the white of an egg.

Beat the egg white till it's stiff. Combine the egg white, sugar and water and stir till the sugar is dissolved. Bring it to the boil, remove it from the heat till it stops bubbling, and then bring it to the boil again.

Skim off any scum — rigorously, or the juice may later ferment. Add the lime juice once the liquid is cool. Keep it in the fridge in sealed bottles. It should keep for a year.

Monstera deliciosa cordial

Monsterias are delicious but bristly. Take the pulp, add an equal quantity of water, bring it to the boil, leave till cool and strain through a sieve. Add an equal amount of sugar then boil for ten minutes. Bottle and seal. Keep it in the fridge in hot weather.

Mulberry vinegar

This is wonderful. You will need mulberries, sugar and vinegar. Mash the mulberries and squeeze out their juice. Add an equal volume of sugar, and a teaspoon of red wine vinegar per cup of juice. Boil for about ten minutes or until it starts to coat the back of a spoon. Take it off the heat and bottle. Seal.

Keep the vinegar in the fridge. Use a dessertspoon of cordial for every glass of iced water or pour a spoonful over a glass of cracked ice.

Orange syrup

Grate off the zest of a couple of oranges (just the coloured outside, with no white at all. It will be thick and oily and will float to the top of the bottles, sealing them).

Juice some oranges and strain the juice well. Add an equal volume (not weight) of sugar. Bring to the boil, take off the heat at once and bottle. Cover with the zest and keep it in the fridge. This can be drunk with an equal amount of water.

Passionfruit cordial

Take two cups of sugar, half a cup of water and one cup of passionfruit pulp. Boil the water and sugar for five minutes. Pour in the pulp and a dessertspoon of citric acid. Stir it well, and bottle when it's cold. Keep this in the fridge once opened or if you are keeping it for more than six months.

Passionfruit fizz

Add the juice of three limes to the above recipe and a dash of bitters. Serve it with soda water.

Pomegranate cordial

This is easy. Scoop out the seedy pomegranate centre. Add an equal amount of castor sugar, and leave it in a jar for three weeks. By then the sugar will have drawn out the red juice. Strain, bottle, and keep in the fridge. Use a dessertspoonful to a glass of cold water or pour it over a glass of crushed ice.

Rose syrup

Rose petals
sugar
lemon juice
water.

Take a pan of rose petals, the more perfumed the better. Just cover with water, bring it to the boil, take off the heat at once and leave it overnight. Mash the petals into a gruel with your fingers, then strain. Add an equal volume (not weight) of sugar to the water and a squeeze of lemon juice. Simmer till the mixture coats the back of a spoon. Remove it from the heat, bottle and seal.

Heady concoctions

Apple cider

2 kg unpeeled, uncored apples — small and tart if possible
3 litres water
1 cup sugar.

Slice the apples, place them in a bowl and cover with water. The mixture will start to ferment after a few days. Leave it to bubble away for 10 days, then strain. Add the sugar to the juice. Stir till it's dissolved. Strain through a clean tea towel, bottle, leave uncorked for about two weeks then seal when fermentation has stopped. Keep the bottles for three months before you use them.

Kvass

Grate three cups of peeled beetroot, then add six cups of warm water. Place this in a pottery jug and cover with a dry cloth. Leave in a warm place till fermented (three days to a week). This one's suitable for Ghenghis Khan or anyone else with a strong head.

Metheglin

Take a handful of rose buds, with the whites cut off, half a cup of violets, half a cup of finely chopped strawberry leaves, a pinch of thyme and marjoram, and a teaspoon of rosemary. Boil them all in 20 litres of water for an hour. Strain. Add half a litre of honey. Boil, strain off the scum, and when it's almost cool add a teaspoon of dried yeast. Leave it all for three days, skim again, bottle, then leave it till it stops fermenting. Add a grate of nutmeg to each bottle, then cork. Don't drink your metheglin for six months.

This is heady, surprisingly good and suitable for medieval feasts.

Recycled rare timbers, from a mudbrick factory

Question: Where can an owner builder buy 60 to 100 year old Western Australian kiln-dried jarrah and karri, and still sleep at night, knowing they haven't added to the destruction of these precious remaining forests?

The answer lies in this story, but who among us hasn't thought about how lovely it would be to work with the fine rare timbers of yesterday, instead of good old pine lining, NZ oregon and other less distinctive timbers?

The jarrah and karri sold by Kenney Pierce Timbers, from their mudbrick factory in Victoria, was saved from the demolished Elders woolstore in Fremantle, Western Australia. It has air-dried to perfection over the decades.

It seems that owner builders and fine furniture makers in the Eastern States appreciate these timbers more than many WA locals.

"West Australians are still burning jarrah in their fireplaces and people in the Eastern States think we're mad," said a spokesperson for the company which demolished the woolstore and, in the process, created a recycling business for Mark Kenney and Gerry Pierce.

"The quality of the timber is fantastic — you just can't get anything like it in Eastern Australia," said Mark Kenney recently.

The jarrah (*Eucalyptus Marginata)* and karri *(E. Diversicolor)* have long been prized building and joinery timbers. The wood is very hard and impervious to borers and termites. Jarrah, the colour of mahogany, is used by furniture makers, and was also used for flooring in many early Australian mansions.

The jarrah posts are 30 cm square and more than four metres long, and the karri is 30 by 12.5 cm and about 13.6 metres long.

"One of the resons this timber's unique, is because modern timbers are dried too quickly in kilns. The trees are a lot smaller today and were grown too quickly. You're not looking at old trees at all.

"Certainly nothing like the monsters these timbers would have come from. If we really wanted to go back through and find the ages of some of those timbers, they would be over 300 years old," said Mark Kenney.

•To contact Kenney Pierce Timbers, see the advertisement elsewhere in this issue.

An alternative factory: the recycled timber and fine furniture is sold from Kenney Pierce Timber's graceful mudbrick factory near Healesville in Victoria.

GHOSTBUSTING PHANTOM LOADS

Peter has written this article with the stand-alone power system in mind — that is, for people with battery banks and solar panels as a power source. A lot of the information is equally relevant to people on the 240 volt grid supply who want to reduce their power bills.

by Peter Pedals
Nimbin, New South Wales.

JUST because a switch says 'OFF' doesn't mean a device is off. Many modern appliances are never really OFF. They contain clocks, memories, remote controls, microprocessors, and instant ON features that consume electricity when plugged in. That's 24 hours a day, seven days a week.

Although the power consumption will often be quite small it will still be draining your battery bank non-stop all year round. If the small load is via a 12 volt to 240 volt (or 24 to 240) inverter the inefficiency of the inverter can make the power consumption quite considerable, particularly over a 24 hour period.

Power pack appliances

The first group of appliances to consider are those supplied with a 240 volt power pack. The appliance is essentially an extra low voltage device with a power pack that is usually in the form of a black (or sometimes white, grey or beige) cube that plugs straight into your 240 volt power point. You may turn off the appliance, but the transformer inside the power pack is still consuming power. Sometimes the same applies to equipment supplied with a standard 240 volt lead (without a power pack) but with a transformer inside the equipment. This transformer is not turned off by the on/off switch that turns off the rest of it. In more technical terms you would say that the primary is still alive.

Inbuilt clock or memory

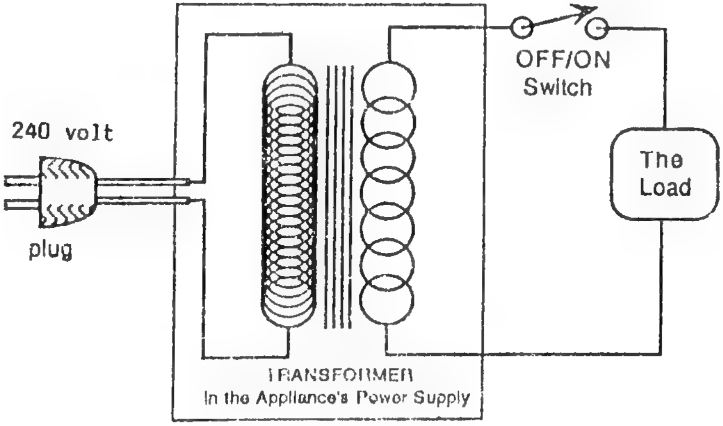
More and more appliances are becoming available that either have an inbuilt electronic clock or some other form of electronic memory that is kept intact with a constant but small electric current. In this case the on/off switch is placed in the circuit so that everything but the clock or memory is switched off by it.

On/off switch and power filter

Most, if not all equipment designed to process digital information will be supplied with a power filter designed to help protect it against spikes and surges in the power supply. Irregularities in the power supply may corrupt the information being processed and sometimes corrupt the program processing the information. Very frequently the on/off switch will be located after the power filter which will continue using a small amount of power after the equipment is turned off.

Ghostbusting — How to detect a phantom

You can find phantom loads by watching for signs of current flow where there should be none. If your 240 volt power supply is via an autostart load-sensing inverter the most obvious sign is if your inverter is still running when



everything is supposedly turned off. You could then simply unplug all the appliances and plug them back in one by one and find which one will cause the inverter to turn itself back on. You may need to unplug this appliance and plug the others back in, one by one, and see if the inverter will turn itself on with any of the other appliances. Any appliance that will trigger a load sensing inverter to turn itself on whilst the appliance appears to be turned off is a phantom load.

You may find that it takes several appliances that are supposedly turned 'OFF' to trigger the load-sensing function of the inverter. This may be because one appliance on its own does not constitute a sufficient load to trigger the load-sensing function.

Another way of detecting phantom loads is with a multi-meter with an amp scale. It is recommended you find a friendly 240 volt technician to measure each of your appliances as you will need to expose the wires at the back of a power point and you are dealing with lethal voltages.

How to deal with phantoms

If your phantom load turns out to be an electronic clock or a constant memory you may first need to ask yourself whether you need or can afford to keep it running constantly. If it is an internal battery charger for a non-volatile memory (memory that stays intact when equipment is turned off) it may be enough to just have it plugged in occasionally.

It is quite important to deal with these small loads in some way because it's forcing the inverter to operate in its least efficient mode for extended periods of time. The inverter is then drawing considerably more power from the battery bank than the device is drawing from the inverter. Very often a 240 volt power pack will be supplying extra low voltage DC to the appliance.

If the 240 volt power pack can be bypassed and the appliance plugged directly into the battery bank or by using a DC to DC voltage adapter, at least you have decreased the power consumption. It may also be possible to supply a low voltage DC inside the appliance in many instances where an external power pack is not used.

For any phantom load that you've detected, and if you're still not sure whether any device is a phantom load, you could simply leave it unplugged when it is not in use. But rather than needing to pull the plug out to disconnect any device you could provide a switching power point and get into the habit of always switching it ON or OFF at the power point.

Part of the solution for dealing with phantom loads is being aware of what to look for and carefully selecting your appliances before you purchase them. You may need to enlist the help of someone who knows, such as your local appliance repair person. Selecting energy efficient appliances that do not behave as phantom loads can avoid a lot of cost and hassle whether you supply your own power or are connected to the grid.

New generation fluorescents

ELECTRICITY-SAVING technologies have improved with such rapid speed in recent years that full use of the best technologies already on the market can provide the same or better services using only one quarter of the electricity used today. And according to Amory Lovins — dubbed by *Newsweek* as "one of the Western World's most influential energy thinkers", and the consultant hired by Victoria's SEC to recommend energy-saving programs — this would not only be good news for the environment, it would also be more profitable for electricity authorities.

The complete use of the best lighting technologies available today would provide the same amount of light but use only 8 percent of the electricity used today.

Fluorescent lamps

Using one 15W compact fluorescent lamp instead of a 75W incandescent globe should reduce your electricity consumption by around 480 kWh over its lifetime (8000 burning hours). This works out as a saving of about $58 at 12 cents per kWh, plus around 460 kg of CO_2 if your electricity is from a black coal fired power station.

Even given the apparently high purchase price of the new lamps, they should more than pay for themselves in lower power bills. If their use becomes widespread, they have the potential to reduce the demand for electricity in peak consumption periods and significantly reduce the amount of CO_2 released into the atmosphere. Every kilowatt hour of electricity generated by burning coal which you save by using compact fluorescent globes can reduce the amount of CO_2 released into the atmosphere by almost one kg.

Another way of considering this new PL compact fluorescent technology is that it puts out four times the light of the old incandescent lighting and lasts 20 times as long. It's been estimated that if the US Government outfitted every home in the nation with these revolutionary lights, the country would be an energy exporting nation within five years!

A state-of the art 20 watt compact fluorescent lamp (light bulb) which screws into a standard household light fixture socket can produce the same appealing, warm-quality light as an incandescent light bulb. Compared to the candle, it emits 100 times more light, is about 1,333 times longer lived, and over its 10,000 hour lifetime, will produce the same amount of light as that from about 133,000 candles.

•If you run your home on solar energy you already know about compact fluoros. If you're connected to the grid you can still attach these wondrous lamps to standard household bayonet fittings. They're more expensive initially, but worth it in the long run (a good Christmas present from friends or family?), and suppliers can be found by contacting your local State Energy Information Centre.

Bushfire protection: a personal survival kit and defence equipment

by Joan Katherine Webster

East Doncaster, Victoria.

FULL fire-retardant coveralls should be worn by everyone anywhere near a bushfire, burning off, or within range of falling embers or ash. No matter how many sophisticated bushfire-fighting facilities you have to defend your property, the people using the equipment can be disfigured and killed unless using protective clothing.

A personal survival kit means a coverall clothing of pure wool or heavy duty cotton. It should also include the following:

- a strong, brimmed hat
- a pure wool balaclava
- zinc or UV cream to protect the face
- strong leather or rubber-soled boots
- pure wool socks
- a nose cover
- wide vision, vented goggles
- a phial of artificial tears (such as Liquifilm Tears or Tears Naturale) to use in smoky or heated air to prevent corneal damage
- a first aid kit
- above all, a pure wool or textured fibreglass blanket.

Protective clothing should be reasonably close fitting but not tight — tight jeans, for example, can conduct heat and burn your skin. Whatever you wear should be adjustable so you can cool off during fire-fighting interludes to prevent heat exhaustion. It must be worn tucked in at overlaps, to prevent indraughts of air (and therefore flames). Pullovers must be tucked into trousers and trousers into socks unless gumboots are worn, when trouser legs must go over the outside of the gumboot and be tied in a 'bowyang' so embers can't drop inside.

Each personal survival kit must have water containers to damp nose covers to filter smoke, and water should be drunk every 10 minutes (whether thirsty or not) to prevent dehydration — an insidious killer factor.

For home and farm defence a reserve water supply of from 25 to 45,000 litres should be kept separate, labeled FIREWATER, and fitted with a hose coupling outlet that has threads matching rural fire brigade specifications.

A swimming pool or dam provides a good reserve. If the supply is on a rise above the house, water can be gravity-fed to hoses. You can't depend on mains water, which usually fails during bushfire.

Protect tank stands with a non-combustible surround and keep them clean underneath. Underground concrete tanks are safe from dire damage. You could modify the household tank by inserting a general use tap above the level of the number of litres required for your reserve. This means the water below that is always available for fire fighting. Connect the reserve to both inside and outside taps.

Hoses not longer than 30 metres each and of canvas or rubber should be available because plastic can melt. Taps installed at strategic points can douse any part of the homestead and main outbuildings. Don't install external taps against walls. If the building ignites, firefighters mightn't be

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able to get to them. Water pipes should be metal. Plastic pipes need to be 40 centimetres underground to prevent melting if they're near dense vegetation or other fire fuel.

Pumps should be easy to start, portable diesel or petrol 3.7 kW (5 hp), and kept in a sheltered place. Mains electricity is often one of the first public facilities to fail during bushfire.

Roof, fence and/or garden sprinklers are good accessories. Sprinklers need to wet the roof, eaves and walls, have 100 percent overlap of spray that's not so fine it will blow away in fierce bushfire weather winds. Ridge-mounted sprinklers are ineffective during strong winds, which blow the spray away from blown embers.

A cheap fence-sprinkler to surround important buildings, hot houses, animal stalls, birdcages or haystacks can be made by mounting waterpipe as a fence rail and inserting sprinkler heads in it.

Portable equipment

You need extension ladders for external roof access, steps for climbing into the roof void through manholes, and strong canvas gloves for handling hot metal equipment or moving smouldering material.

Also fire hydrants, knapsack sprays, stirrup pumps, hose connectors, adjustable nozzles, extinguishers suitable for grease, petrol or electrical fires in sheds; rakes, rakehoes and shovels, old baths, drums or other large containers and multiple metal buckets which can be kept filled and left in vital places during the summer

Also, small throwing dippers or mops, fibreglass fire-extinguishing blankets, beaters of leather or canvas strips, hessian bags and tennis balls or the bottoms of milk cartons for blocking gutter downpipes.

Graders, ploughs and rotary hoes can be used to construct emergency earth ramps to divert firewinds, or ditches to catch tumbling, burning rubbish.

A CB radio tuned to the local bush fire brigade channel for news of fires in your area, and two way pocket radios to contact family and workers provide even more comprehensive protection.

* * * * *

Evacuate or stay? Safety or suicide?

MANY people, during bushfire threat, say: "Run for your life!" But more often than not, you would be running to your death.

The problem with evacuation and bushfires is that the only truly safe time to go is when a fire is so mild that there is little danger — and from this type of bushfire your home and property can be easily defended. To evacuate once you can see flames or smell smoke is too dangerous.

There has been an assumption that a fire will start some distance from your property and move slowly towards it, giving you time to "decide to evacuate early". It can start in adjacent bush, in the vacant paddock next door, or speed up from a slope below you. You might think you'll decide ahead: "I'll evacuate when smoke is a small, straight plume ... that is safe and early". It doesn't often work out that way.

On hot, windy days, as soon as the fire is lit it can race away. Evacuation from a bushfire can be safe only in the embryo stage. You need to know that when you are evacuating from bushfire along narrow, twisting, tree-flanked road as ash, embers and bit of burning bark rain down, flying saucers of galvanised iron can fly overhead in the fury and 15 metre trees snap like drinking straws before the fire wind.

Spot fires can spring up in roadside vegetation, commonly 10 kilometres and occasionally 30 kilometres ahead of the main fire, and so evacuation often transports people towards it — towards being trapped between fires.

Evacuating doesn't necessarily take evacuees away from the fire. Often people drive towards a new front. Very often they crash in smoke. Frequently a string of mass-evacuating cars are stuck because some stall.

Any person evacuating in smoke or during the shower of embers has a very strong chance of death, injury, terror, loss of their home and precious possessions and lasting psychological problems.

The only guaranteed safe time to evacuate if *before* a bushfire starts — on the evening before or early morning of a predicted hot, windy day. This is the time to take the frail, very old and very young to friends in town. Everyone else should stay home to defend it.

One reason people feel impelled to flee from homes threatened by bushfire is that they fear the building will explode from the intense heat of approaching flames. This is a myth. There is not space here to explain, but in *The Complete Australian Bushfire Book* (published by Viking O'Neil) you will find detailed, scientific reasons.

You can control the intensity of the heat reaching your home. It is directly proportional to the density of the vegetation close by.

The only reason to fear staying at home during bushfires is the fear of fear itself. There are more valid, practical reasons for fear in evacuating, which is almost always done too late to be done safely.

The only answer is to plan, be prepared, and be practised. You can modify your home to seal it from flying sparks and embers, protect glassed areas from hurtling debris, and keep your garden uncluttered. You can also take care by raking grounds, clearing gutters and providing yourself and family with protective clothing of pure wool coveralls (which can be cheap at the local Op shop). If you do these things, have emergency water, and learn the simple but lifesaving protection procedure pattern, then during a bushfire you can be as "safe as houses".

Diet for a new civilisation

by Marcus Bussey

Mt Tully, Queensland.

AS BOB Rich said in Earth Garden 72, there are only two kinds of people in Western countries: Greenies and Suicides. This is a challenging and accurate assessment of things. However, many greenies may be compared to the cucumber: green skinned but white fleshed!

The point here is that being green is more than retreating into a green asylum. It is spreading to others your world view in a positive way, your hopes and fears for the countless tomorrows that we and future generations all deserve.

An area of huge concern to me is the way that the livestock industry is contributing to the destruction of our environment. 'Diet For A New America' is a new book which presents a startling picture of what it takes to get the steak on the plate. The simplest way to show you what I mean is to extract a few of the facts in the book.

•It takes 25 gallons of water to produce a pound of wheat, but 2,500 gallons to produce a pound of beef. Half the US water consumption goes in raising beef!

•90 percent of water pollution results from organic wastes attributed to livestock.

•The inorganic residues of pesticides are overwhelmingly caused by meat production (55 percent) and dairy operations (23 percent). For example, US corn production, which is predominantly geared to feeding livestock, uses 30 million pounds of toxic chemicals each year. Only 11 percent of combined pesticide residues come from growing vegetables, grains and fruits.

•If all humans were meat-eaters, global petroleum reserves would disappear by the year 2003; if they were vegetarians, by 2250.

•If only 10 percent of Americans stopped eating meat, oil imports would no longer be necessary.

•A large amount of rainforest destruction in South America is due to clearing land to create ephemeral pasture for beef production for the US market. Tropical soils are thin, however, and the new grazing lands are soon depleted, forcing a migration deeper into virgin stands of forest. Abandoned pastures erode and become virtual deserts, watersheds become mudsheds and hydroelectric reservoirs become silted and useless.

•After suffering deforestation, floods and malnutrition in order to grow fillet mignon, the people of Costa Rica eat less meat than does the average North American house cat.

•Five pounds of protein must be fed to chickens to produce one pound of chicken protein.

•When grain is fed to livestock, most of its protein (90 percent), carbohydrates (100 percent), and dietary fibre (100 percent) is wasted.

•An acre of land can produce 20,000 pounds of potatoes but only 165 pounds of beef. Approximately 20 vegetarians can be fed on the amount of land it takes to feed one meat-eater.

•US livestock in confined feedlots produce a billion tons of unrecycled waste each year.

•85 percent of topsoil loss through soil erosion in the US is directly attributed to raising livestock, and each year four million acres of farming land are lost to such erosion.

•260 million acres of US forest have been cleared to create cropping land for livestock, and one acre of trees are spared per year for every person who switches to a vegetarian diet.

•The World Health Organisation recommends that 4.5 percent of daily calories should be derived from protein, and rice contains 8 percent protein as calories. An ironic observation is that the disease linked to inadequate protein consumption is kwashiorkor, and there are virtually no such cases in the US. However, the diseases linked to *excess* protein consumption are osteoporosis and kidney failure, and there are tens of millions of such cases in the US.

We are living in an era of ever accelerating change. Stalinist communism is in ruins in Europe, capitalism is teetering on the brink of depression, Third World countries ravage their people and land in a desperate struggle to drag themselves out of the mire of poverty while most Western nations pay little more than lip service to the current crisis.

And what do we Earth Gardeners do? Leave the city, renounce the materialist values of our generation, seek a healthier, gentler way of living through tilling the soil with due respect, actively seeking alternatives to the sundry dependencies we've been conditioned to since childhood.

Is there more we can do? Yes. We can lobby, agitate, wave a flag or two. But we don't have to be obnoxious about it. Be clear. Crystal clear. Be informed. Persuade with facts.

Seek outlets to disseminate information. Try your local paper's Letters to the Editor, then sympathetic forums like our Earth Garden. It's not hard, and be consoled that for every rebuff you get from an alienated soul, there is always another out there prepared to listen.

We don't have to chain ourselves to trees or defy police to be green. It is possible to be just as daring at home with your humble typewriter. What is important is to be constantly on the lookout for chances to inform people, to challenge their status quo, to tear the fog from their minds and let in the light. This is a great service. How about a letter to the local paper pointing out the ecological and environmental damage caused by the meat industry?

•The facts in this article are extracted from 'Diet For A New America', by John Robbins, which has been nominated for the Pulitzer Prize. Reviewers have said some remarkable things about the book. For example, Harvey Diamond, author of 'Fit For Life', says: "I never thought I would ever recommend another book ahead of my own. But I do just that with 'Diet For A New America'. I consider it one of the most important documents of the 20th Century."

'The Washington Post' said: "Profoundly fulfilling and deeply moving . . . the pioneering match of Aldo Leopold's 'Sand Count Almanac', John Rawls' 'A Theory of Justice', and Rachel Carson's 'Silent Spring'."

'Diet For A New America' is published by EarthSave, a nonprofit educational organisation. It costs $16 US posted, from EarthSave, 706 Frederick St, Santa Cruz, California, 95062-2205.

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—Vaclav Havel.

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The Healthy House Cow

written and illustrated by Marja Fitzgerald

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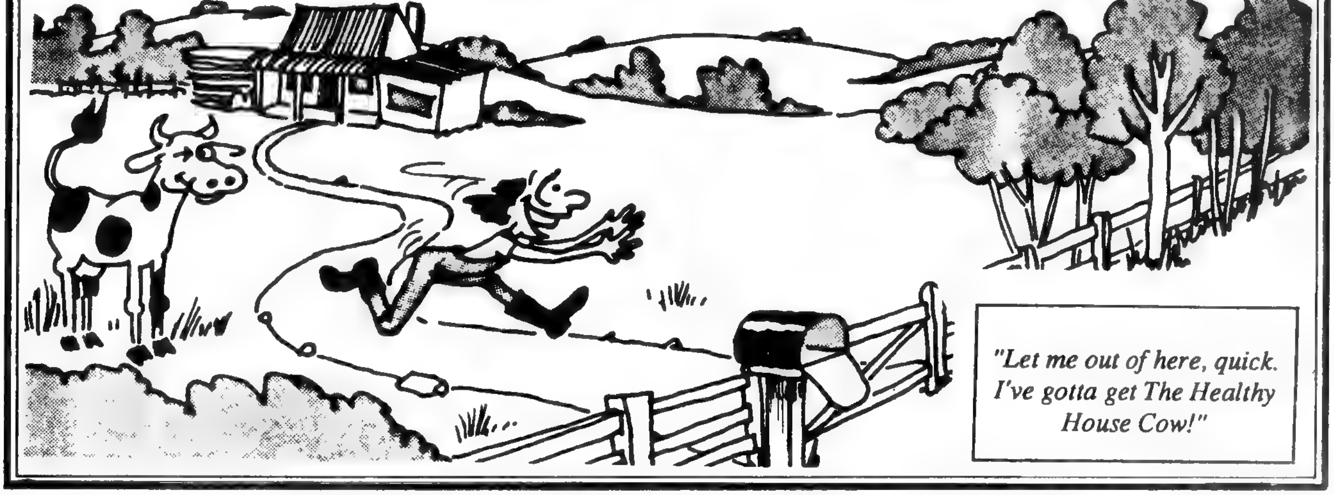
"Let me out of here, quick. I've gotta get The Healthy House Cow!"

Life on a Verandah

by Jose Robinson

Wild Cattle Island, Queensland.

CALL it a patio, a terrace, a portico, a balcony or a verandah. It's all much the same thing, but it's where we do a lot of our living. Our modest island home overlooks a big expanse of water called an estuary. If real estate sales agents were describing our home, I guess they'd say, "First class views of the magnificent Pacific Ocean," — and they'd be right.

It's a rare day that we don't observe at least one big ship passing by out at sea. In the winter months, which is the start of the coastal cruising season for yachts, we see a continuous stream of southern yachts all heading for the warmer Queensland waters and the Barrier Reef.

Apart from our bedroom and the kitchen, the verandah is the most important 'room' in our house. Most of the year we eat there, at least for breakfast and lunch. The evening meal is normally inside for the few short winter months. On summer evenings we frequently have a barbecue meal on the verandah to make full use of the long warm sunny days.

Our verandah-deck is an extension of the living room, but unlike the living room, we don't need to provide any décor, because it's all supplied free by Nature, and it's ever changing. We have clear azure blue skies, giant beech oaks, coconut palms and pandanus palms. There is a golden beach shoreline at our doorstep, and a mirrored image of the next close island only 500 metres away. Nature must have been in an artist's inspired mood when she created this scenery.

Why lock yourself up in dark rooms when verandahs can open up a house to this kaleidoscope of natural beauty? What mere mortal can compete with the décor provided by Nature? The compatibility of the jungle greens, the ultramarine skies, the reflected blue-greens in the water, the creamy golden sand dotted with scraps of rust-coloured seaweed, all form a mosaic of splendour. An artist's palette can only make a humble replica of these vibrant colours.

Our mild Queensland climate goes together with verandahs and lattice as it does with hats and sunglasses.

When family or friends come to visit, it is on our homely verandah that we sit and make new plans, or discuss world problems, or the current state of the economy.

When the strong prevailing winds blow from the south-east, we watch our wind generator in the front yard turning faster than the eye can follow, and we smugly say to each other — "There's 10 amps going into the battery bank". But on the calm windless days, of which there are plenty, the words go something like this — "Why, oh why did we waste our money buying a wind generator — it hasn't turned for a week! We should have bought more solar panels!" I guess it balances out over a period, and each energy source has its turn.

It is on this peaceful verandah that we exchange titles of books recently read, or compare notes on the horrors of sandflies or sunburn or plumbing. The backdrop changes slowly and gently as together we enjoy life on our verandah.

The seedling apple

by Beulah Jarman

Devonport, Tasmania.

I WAS the fourth generation to work in the first garden I can remember. It was a large country garden, with plenty of room to practise crop rotation. The soil was rich and deep, providing ideal conditions for naturalisation. Seeds shed by the trees and shrubs produced a new generation of plants in a remarkably short time, creating a pleasing disorder, as well as a source of endless delight. We always had a supply of plants to give away.

We made our next garden after the Second World War, when we built our house in a paddock in the south east corner of our farm. The soil was stiff, coarse and uncompromising, and overdosed with artificial fertilisers. However, with care the plants grew quite readily, and we raised a number of trees from cuttings brought from the home garden. But it was years before seedling trees came naturally, as they should in all good garden soil.

Then it happened. The tiny seedling appeared in a most awkward, uncongenial situation. No one dreamed of destroying or transplanting it, despite its uncomfortable location. We hoed and weeded in its vicinity ever so carefully, and the plant grew and grew.

Visitors would smile indulgently and hasten to tell us that seedling fruit trees . . . yes, we were sure ere this that it was, in fact, a young apple . . . were a waste of space, so we decided, very reluctantly, that the tree must go. It was two years old by now, and had made a substantial amount of 'wood'.

So we cut it back to ground level, but with the persistence of its kind, it made a second growth, much stronger than the first. Again it was severely 'pruned', with a similar result.

Meanwhile another shrub, a *cotoneaster serotina* in close proximity, was making rapid growth, and during a time when I was busy with the small children, and not doing much gardening, it covered the apple tree with its spreading branches. We forgot our little seedling because we could no longer see it!

Several years were to pass before we again became aware of the apple tree. It was a showery day in late spring when we noticed a cluster of pale pink blossom perched high in the branches of the cotoneaster, and we thought we were having optical illusions. Closer investigation revealed that the seedling had been growing unnoticed, up through the berry tree, and having reached the light, had made this great truss of flowers.

The following spring, several bunches of blossom appeared, followed in due time by tiny fruits which, by autumn, had developed into a considerable crop. The apples were large, well-shapen, green, and striped with russet-red. They cooked quickly, mashing to a fine pulp, with a sharp, tangy flavour. They were rather too acid to eat as a dessert apple.

Its parents? I know not. But in shape the fruit resembled the old Prince Alfred variety often found in long-established country gardens, although this one was rather smaller, not so sweet, and maturing later.

We retained the tree of course, and discarded its competitor, of which we had others. We named it *Acerbus*, derived from a Latin word meaning "sharp to the taste".

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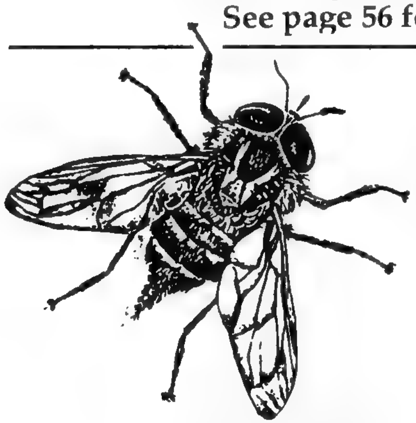

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EARTH GARDEN REVIEWS

— Edited by Sophie Masson —

Australian Country Women's Craft
The Country Women's Association
Viking O'Neil (through Penguin), $24.99.

This is a lovely book which should appeal to many craft lovers. It is a rather traditional, but interesting collection of crafts as practised by CWA members all over Australia. There are sections on embroidery, canvas work, lace, patchwork, crochet, knitting, general needlecraft, and 'Australian crafts' — working with gum nuts, wool and bark. There are all kinds of projects to make within each section, from pincushions to jackets, cushion covers to jumpers, swagman dolls to park pictures, brooches to samplers and much more. The book is very attractively produced, with good diagrams, colour photos, and clear instructions. It will no doubt be most popular.

A Guide To Keeping Bees In Australia
by Norman Redpath, Viking O'Neil, $19.99.

This is an excellent book which I can't recommend too highly. It has everything an amateur beekeeper could possibly want to know, told in clear, interesting and precise prose. There are chapters on the honeybee itself, its varieties and anatomy; on the bee colony and how it works (an amazing, almost surrealistic society!), on floral sources of nectar and pollen, how to obtain bees, hives, location of hives, handling bees, managing your apiary, requeening and breeding, how to keep bees healthy, collecting honey, products of the hive, regulations on bee-keeping, and a list of useful addresses. I would go so far as to say that this book, with its attractive layout and excellent information, must be the standard beekeeping text in Australia. Or it should be.

Private Gardens Of Australia
by Sarah Guest, photos by Jerry Harpur, Lothian Books, $50.

This book is definitely in the luxury class. It features a host of some of the most beautiful gardens you're ever likely to see, from every State in Australia.

There are tropical gardens in north Queensland; gentle English-style gardens in Tasmania, and magnificent gardens combining the English and Australian traditions in the Blue Mountains of New South Wales. Each garden is described, and its history explained, and each is featured in full colour. It's a book to make you dream . . .

The Complete Homeopathy Handbook: A guide to everyday health care
by Miranda Castro, Macmillan Books, $35.

Judging from the amount of publicity and shelf space that so-called 'alternative' medicine gets these days, I don't think it's so much on the fringes any more! Homeopathy, which has a 200 year history of efficient use, is one of the 'holistic' medical systems to benefit from the present spotlight.

This book is an excellent one of its kind. Miranda Castro, herself a practising homeopath (in Britain), details the history of homeopathy, its principles and uses, the *materia medica* or ingredients used in the homeopathic preparations, prescribing guidelines, diseases you can treat with homeopathy, case studies, a reading list, a fairly good index, and much more.

It is, indeed, a comprehensive handbook and has already been consulted several times in our household.

Miranda Castro gives sensible, clear advice, and does not shrink from telling the reader that there are some circumstances in which it would be foolish to self-diagnose or attempt to treat.

Gardening with Australian Plants
by Rodger Elliott
Lothian Books, $12.95.

This book is part of the excellent and comprehensive series of Lothian Australian Gardening books. It features the ever more popular, versatile and beautiful native plants of this continent.

Gardening with Australian Plants has detailed descriptions of over 250 species, from annuals and groundcovers right through to orchids, trees, ferns and much more. There's advice on the provision of shade, the selection of plants, on windbreaks and frost-prone areas. It is designed both for people who are already familiar with growing Australian plants, and for those who are only just beginning to find out. There's also a wealth of information on cultivation needs and the maintenance of your Australian garden.

The Young Person's Guide To Saving The Planet
by Debbie Silver and Bernadette Vallely
Virago Upstarts (through Random Century), $7.95.

This book is printed on recycled paper, and aims to inform young people on the ways they can help save the planet. The book is divided into several sections: a quiz, designed to show you how well informed you are on green issues (with a score from 'very pale green' to 'dark green'!); an alphabetical list of 'green' issues and what you can do about them (from 'acid rain' to 'zoos') and list of addresses (many of which are British ones, but which include some Australian ones). It is a readable and interesting book, and does not preach too much. Many teenagers will find it very interesting. It is also a well laid-out and attractive book.

The Cottage Garden
by Christopher Lloyd and Richard Bird,
Dorling Kindersley, through Random Century, $29.95.

This is a very beautiful book, extolling the loveliness and satisfying nature of the cottage garden. By their very nature, cottage gardens are little models of ecological thought in action — herbs, fruit, vegetables, flowers, co-existing and flourishing, and tended naturally. This book traces the history and development of the cottage garden, and profiles the plants often found in them. There are also good informative sections on planning a cottage garden, maintaining it, and using its produce. With its magnificent photographs, the book is also a visual delight, and would make a wonderful Christmas present for a lucky gardener.

Science Club Series Of Books: Light Fantastic, Liquid Magic, Super Motion, Amazing Air
each book $8.95
published by Walker Books (through Random Century).

This is an excellent series of books, suitable for children from about the age of 6 or 7 to about the age of 11 or 12. It aims at educating children about the world around them, and the wonderfully strange forces and aspects of Nature that too often we take for granted. With these books, learn about how vibrations translate into sound; how a state of perfect balance can be achieved; about aerodynamics and invisible ink; air pressure and the behaviour of liquids about lights and mirrors and much much more! It's not only kids who can learn, either.

Planning Your Garden For Retirement
by Janet Taylor
Lothian Books, $12.95.

This is another book in Lothian's Australian Garden series, and approaches an unusual gardening subject with flair, and much interesting advice and information. In it, Janet Taylor details many ways in which your garden can be an enjoyable part of your retirement. Why move, she says, if you can modify the maintenance arrangements in your own garden?

She details ways in which you can analyse problems in gardens, and set about finding solutions. There are such topics covered as planning for easier maintenance; planning for safety; planning for convenience, new design; and ways in which to improve your own posture and health.

As an occupational therapist and adviser on garden maintenance to elderly people, and people with

disabilities, the author is uniquely qualified to offer sound advice. This book, like the others in the Lothian series, is well laid out and illustrated with black and white diagrams and colour pictures.

The Life and Death of a Druid Prince
by Anne Ross and Don Robins
Century Hutchinson.

Two thousand years ago, when the Romans had laid waste to Celtic culture in Britain, a young man was undergoing a gruesome rite of sacrifice. In order to placate the gods, and bring about a reflowering of Celtic pride, this young man was a willing party to his own three-fold death.

We might never have known him, or of many fascinating aspects of the culture whence he came, if it hadn't been for an astounding discovery —the accidental uncovering of the "Body in the Bog" (or Peat Marsh as he was dubbed by the irreverent, punning British press) in 1984, at Lindow Moss near Manchester. Starting from this mummified body, the authors of this book — Celtic historian Anne Ross and biochemist Don Robins — have put together an astounding picture of a time, a place, a culture, and a person. I've always been interested in Celtic culture and history, but I learnt many things from this book, one of which was that the Celtic Gauls, in what is now France, had invented a horse-drawn reaping machine — and this in a people despised by the Romans as barbarians!

This is a book I'd recommend to anyone interested in ancient peoples, in our origins, and in the distortions of history which have seen people like the Celts relegated to some outer land of 'barbarism' away from the 'civilised' nations such as Rome (there are uncomfortable parallels for our own time). And the figure of that young man, who died to save his people, is oddly touching.

SOLAR-POWERED CONFEST!

The 1990/91 Down To Earth ConFest, to be held near Walwa on the upper Murray River from December 29 to January 2, will be powered by renewable energy from the Rainbow Power Company (RPC), and backed up by Strath Steam of South Australia.

The RPC's alternative power system will totally replace the diesel generators used at previous ConFests. Eliminating such nioise, smell and pollution will be a pleasure for all ConFest participants.

One hundred 54-watt solar panels, mounted on tracking frames, will supply the ConFest power needs while it's sunny, and this primary energy source will be backed up by Strath Steam's generators, running on local firewood. 5000 amp hours of battery storage arranged under the solar arrays will then supply the power to the Festival and meet the varying demands during each day. The battery power will be inverted and reticulated as a standard 240 volt supply.

This will definitely be a positive demonstration and a real contribution towards a more environmentally-conscious lifestyle.

Energy demands

There will be efforts to keep energy demands minimal. Two trailer-sized cool rooms will be the biggest single energy consumer and water-pumping, the second largest demand. To minimise the power demand for lighting, each stall will use high efficiency PL lights. A 13 watt PL light wil provide as much as a 75 watt incandescent globe. Heating, where needed, will be provided by the individual stallholders with gas or wood-burning stoves. The front gate will have its own 'stand-alone' power system with a couple of solar panels and a 200 amp hour battery bank.

Communications

The RPC will also bring a low-powered FM radio transmitter, as an alternative to boring old bullhorn announcements. This system can broadcast music for people with FM radios, as well as allowing short 'commercials' for workshop and housekeeping annoucements.

Alternative energy display and workshops

The RPC will have a permanent display and will be holding a number of workshops on renewable energy technology and how it can be used at home.

End of ConFest sale

Solar panels, batteries, inverters and other equipment will be on sale at bargain basement prices at the end of the ConFest.

The EARTH GARDENER'S Companion

JACKIE FRENCH

The EARTH GARDENER'S Companion is a month-by-month guide to organic planting, gardening and harvesting. It is a fruit and vegetable-growing calendar for the not-quite self-sufficient. It's an excellent introduction to natural pest control for any time of year your garden is being munched by non-humans. With the Companion you will know what to do in your garden at any time of year and get a total picture of organic garden health: not the artificial view you get from the back of a chemical fertiliser packet.

Jackie French is well known to Earth Garden readers through her popular column, *Season By Season*. She is an expert and successful organic gardener who practises what she preaches, and understands that in home vegetable gardens, labour is usually in far shorter supply than enthusiasm.

The EARTH GARDENER'S Companion is available from Earth Garden for $8.95 posted. See page 56 for ordering details. The Companion is printed on recycled paper.

EARTH GARDEN UNCLASSIFIEDS

Unclassifieds are 40 cents per word, prepaid. The deadline for the next issue is 8 February.

SHEEP FOR SALE. Coloured and white, fleece excellent for hand spinning. $15. Ring Jolanda, (059) 62 3875 (near Melbourne).

SEEDS OF UNUSUAL, USEFUL PLANTS. Open pollinated, easy to grow. Oriental Asian vegetables, sub-tropical fruits, herbs, spices, fragrants, curiosities, cottage garden flowers. $1 per packet. Mail order only, no visitors please. For list, 2 stamps to Lorraine Blaney, Wallace Road, Beachmere, 4510.

NEW WIND GENERATOR. Whisper 1000. 1 kW 12/24/48V only $2500. First shipment already sold. Get in early for new arrivals. Also: SUNENERGY GenSet (RAPS) from $7700. Complete solar water pumping, electric fencing, tractor battery charging. Contact: ELANTE Pty Ltd, 380 Canterbury Rd, Surrey Hills, Victoria, 3127. Phone (03) 836 9966.

LOW SPEED GENERATORS for wind mills, water turbines, steam engines. The definitive book: 'The Homebuilt Dynamo" (1987) 182 pages, 8 1/2 x 12 inches hardback. Generator design and construction with ceramic magnets. Complete plans, 268 photographs, step-by-step construction details. Post paid airmail $85.00. Todd-Forbes Publishing, Dept D7, Po Box 3919, Auckland, NZ.

PERMACULTURE design course, Jan. 14-28, at Toolangi near Melbourne, for further details write to: Bill Beke, PO Box 9, Kinglake 3763. Ph: (057) 861 482.

BOOKS, old and new. Send for general list. R Suters, PO Box 127, Figtree, NSW, 2525.

COMPANION PLANTING CHART. Over 90 vegetables, herbs, fruits, including plants as insect repellents. Mail order $4.50 (postage included). SOW WHEN CHART. Suggested sowing times for 100 vegetables, herbs and flowers. Mail order $5.00 (postage included). 'Plum Products' (E) RMB, 2907, Bruthen, Victoria, 3885.

ALADDIN LAMPS, three, including shades, hanging frames, two pedestals, 3 chimney mantles, wicks and manual plus antique American kero lamp with hanging frame $500 the lot. (03) 534 1072.

SEED: fruit & nut. Over 200 species. Personal collection in season assures viability. For list, send SAE to Fruit Spirit Botanical Garden, Dorroughby, NSW, 2480.

SEX EDUCATION — Hathor the Moon Cow. NUTRITION — House of the 3 Froggies. Two teachers' manuals based on holistic education principles. Send $10 each book — Alan Whitehead, Box 481 Mullumbimby, NSW, 2482.

MAKE fireproof cement from aluminium cans, send $1 and Stamped Addressed Envelope to B McMahon, c/- Post Office, 2731.

AUDIO EDUCATION the fun way for children of all ages to learn at their own pace. Set to music and rhythm children find themselves out of the classroom and into the funroom. Catalogue. Audio Education, PO BOX 624, Ipswich, Queensland, 4305.

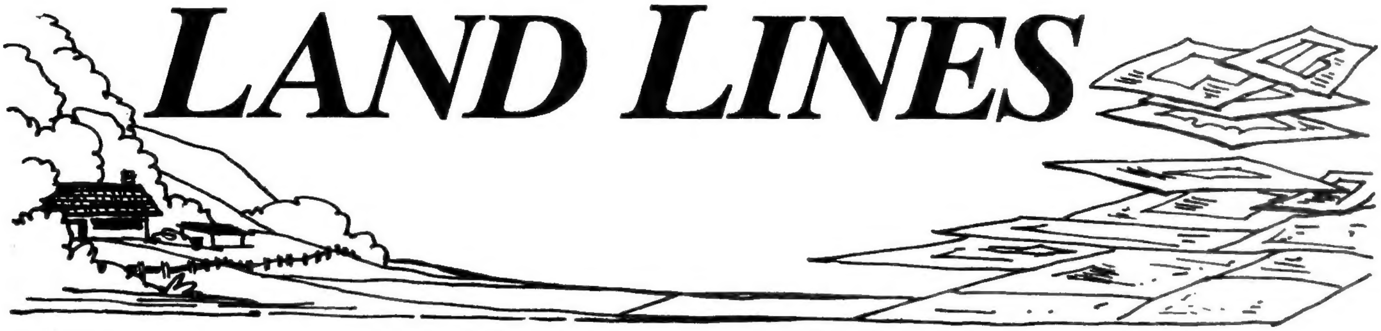
RYLSTONE/GLEN ALICE. 42.5 undulating hectare, 9 sq brick house extensive views of Capertee Valley. Established parklike gardens, bitumen road frontage, 4 large dams, large lockup shed, shade house, 60 acres fenced into 4 paddocks, yards, phone, new electricity connection and lots more. $149,000. Ph (068) 866133.

COOL temperate and coastal areas permaculture design certificate course. 10-23 March 1991. South Coast, NSW. Course includes: lectures, field exercises, practical design work and tour of local permaculture examples. Tutors Frances Lang, Hugh Gravestein, Andrew Sheridan. H Gravestein Myrtle Forest Rd, Wyndham, NSW, 2550. Phone (064) 942 014.

"THE POTENTIAL OF CHANGE", a look inside the 1990 Mind-Body-Spirit Festival. 45 minute documentary that provides a unique cross-section view of exciting new developments in health, healing and consciousness. VHS cassette $40 pp, Network 23, Alternative Media Television, The Avenue, Valley Heights, Blue Mountains, NSW, 2777.

PERMACULTURE reusable envelope labels, 200, $6. Permaculture Nambour Inc, PO Box 650, Nambour, QLD, 4560.

LAND LINES



LAND LINES are for people buying, selling, seeking or sharing houses and land. It is your responsibility to check all deals. We charge 40 cents per word (prepaid) for a listing of any desired length. All LAND LINES must include your name and address (phone number is optional). LAND LINES for the March issue should arrive (at RMB 427, Trentham, Victoria, 3458) by 8 February.

I AM looking for few acres with or without a dwelling, suitable as a retreat. Important — peace, solitude, secluded, safe, permanent creek, a commitment to the environment, conservation, close a national park, in either south east Queensland or northern NSW. Please write to KW, PO Box 74, North Quay, QLD, 4002.

CARETAKER required for small mudbrick house on 45 hectares of mallee bushland for a period of 6-18 months negotiable. Situated in remote district in south east Western Australia. Ideal for peaceful environmentally sensitive lifestyle. Owner studying in NSW. Contact Heather on (02) 436 4427.

VERY QUIET and very private 50 acres of forest, 5 acres cleared with 3 dams (gravity feed to buildings), sheds, wooden shack with wood stove, potbelly heater, solar lighting (5KVA generator back-up), solar hot water, rainwater tanks, established gardens and orchards. Forest has small winding creek (with several swimming holes) through tall timbers, palms and ferns. 4WD access when wet. 45 minutes to Port Macquarie, Kempsey and Wauchope. Phone (065) 836040. Realistically priced, $92,000.

CENTRAL VICTORIA — Pinpandoor. Exciting new, environmentally planned, 240 hectare village will soon be available near Bendigo. 59 blocks from 0.5 ha to 3.5 ha. 140 ha of common land provides space for all community facilities and protection of mountainous forested environment. Easy vendor terms available. Phone owners on (054) 395-395.

Centre for Aboriginal Artists

88 Todd Street, Alice Springs, Northern Territory, 0871.
PO Box 130. Telephone (089) 52 3408.

A non-profit art gallery

Established in 1972
by the Australian
Government

Home of Central and
Western Desert Art.

The Healthy House Cow

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Australia's first house cow book written from an organic, wholistic perspective. Everything from fencing to cheesemaking and organic health solutions. 'The Healthy House Cow', published by Earth Garden, is now available. 144 pages, large format paperback, and full of useful information for prospective or current house cow owners. $18.00 posted -

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BOOKS & BACK ISSUES OF EARTH GARDEN

BOOKS All prices include postage. Please allow 2 to 3 weeks for delivery.

The EARTH GARDENER'S Companion, by Jackie French $8.95 posted.$ . . . .
ORGANIC CONTROL OF Common Weeds — $14.95 . . . .$ . . . .

ORGANIC CONTROL OF Household Pests — $14.95 . . . . $ . . . .
ENERGY WORKS! — $19.95 . . . . $ . . . .
Earth Garden Building Book — $29.95 . . . . $ . . . .

EG binders (holds 12 copies tightly) — $25 for 2 , $15 each . . . .$ . . . .
THE HEALTHY HOUSE COW — $18.00 . . . . $ . . . .
One year subscription — $16.00 (add $6 for overseas sea mail) . . . . . $ . . . .
The Lot: From EG 1 to one before current issue (excludes
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EG1: Move out . . . food co-ops . . . Kibbutz and Moshav . . . Montsalvat . . . herbs . . . Fred Robinson . . . bean sprouts . . . compost and mulch . . . comfrey . . . earthworms.

EG2: Start a garden . . . Neil Douglas . . . Keyline system . . . Kiewa farms . . . drying and storing food . . . hydroponics . . . recycling garbage . . . nutrition.

EG3: Herbs . . . compost . . . fast fertiliser . . . all about goats . . . mudbricks . . . domes . . . water wheel . . . bread . . . salads . . . pottery . . . spinning . . . vegies.

EG4: The honey bee . . . back to the land in Tassie . . . the transition . . . black sheep . . . tanning . . . candles . . . bread . . . donkeys . . . a wall-hanging.

EG5: The wind — windmills . . . windpumps . . . generators . . . raku pottery . . . Cinva ram . . . poultry . . . Hamburghs . . . moon planting . . . fallout shelter . . . vegan way.

EG6: Solar 1 — sun cults . . . solar cooker . . . sundials . . . Lost World . . . Clifton Pugh . . . concrete house . . . Shalom . . . Cajun cookin' . . . horses . . . spirit of Nimbin.

EG7: Solar 2 — hot water . . . Mudbrick techniques . . . Angora goats . . . make a leather bag and belt . . . mushrooms . . . natural dyes.

EG8: Gas power — methane digester . . . by truck to Tassie . . . cumbungi hats . . . inkle loom . . . candles and tapers . . . country cottages . . . A-frame . . . school gardens . . . sourdough.

EG9: LP gas . . . Mary's place . . . building with stone rubble (slipform) . . . macrobiotics . . . oats . . . ducks . . . rug frame . . . how to kill a pig.

EG 10: OUT OF PRINT.

EG11: Water — hydraulic ram . . . waterwheels . . . okra . . . seed primer . . . heavy horses . . . tomatoes . . . soft technology . . . wine . . . hard cheese . . . start with hens.

EG12: Keeping food — drying . . . salting . . . bottling . . . storing . . . tahu . . . tropic delights . . . plant propagation . . . plans for a solar water heater . . . solar stills and cooker . . . Moora Moora.

EGs 13—15 OUT OF PRINT.

EG16: A Lytel Herbal (Part 2) — comfrey, lavender, wormwood, yarrow . . . poultry shed . . . peafowl . . . goats . . . basic beekeeping . . . rammed earth building . . . hydraulic ram.

EG17: Fencing . . . dry stone walls . . . make soap . . . nets . . . pole shelter . . . breeding black sheep . . . The Autonomous House . . . asparagus . . . Aeolian harp . . . ducks . . . Khaki Campbells.

EG18: Fruit garden . . . oranges . . . lemons . . . olives . . . nuts . . . tropical fruit . . . fodder trees . . . road building . . . wood fired kiln plans . . . Cinva-ram cottage . . . sunflowers . . . homebirth.

EG19: Wood heat — pot bellies . . . Jotul . . . cooking . . . making a quid . . . build a storage cellar . . . bushfires . . . stonefruit . . . macadamia nuts . . . binding your EGs . . . tree planting . . . budding.

EG20: Apples . . . pears . . . cordon and espalier . . . build a haybale pig house . . . pollen . . . rose hips . . . mudbrick flats . . . solar homes . . . gourds . . . preserve fence posts.

EG21: Womancraft — all articles by women . . . earthly arts . . . axewomanship . . . glove puppets . . . spinning . . . weaving . . . easy rugs . . . Sumatran house . . . old roses . . . Index (EG10-20).

EG22-23: Australian Access Sourcebook . . . 150 pages . . . Aborigines . . . organic growing . . . permaculture . . . earth building . . . wind . . . solar . . . water power . . . technology . . . water supply . . . access to groups, plans, books, tools.

EG24: Place — 24 new settlers write . . . Mare Carter . . . Ron Edwards . . . Neil Douglas . . . Gundaroo Store . . . Rainbow Region . . . Mt Oak . . . Moora Moora . . . Universal Brotherhood . . . bush ashram.

EG25: Australian Access Sourcebook (Part 2) — 130 pages . . . livestock . . . aquaculture . . . fencing . . . killing . . . tanning . . . food and nutrition . . . grain grinders . . . solar homes . . . methane . . . greenhouse . . . Dorothy Hall.

EG26: The earth-built kasbahs . . . owner built homes in stone . . . timber . . . mudbricks . . . a slab cottage . . . tree felling . . . solar electrics . . . acorns . . . compost dunny . . . quandong . . . pumpkin recipes.

EG27: 100 tropical food plants for Australia (part 1) . . . 16 legumes . . . winged bean . . . pigeon pea . . . lablab . . . cowpea . . . adzuki bean . . . blacksmithing . . . bluestone building . . . wok cooking.

EG28: Tropical food plants (part 2) . . . horse and buggy . . . packhorsing the Alps . . . black sheep . . . Merinos . . . bullocks . . . tamarillo . . . stringybark baskets . . . solar trike . . . persimmons.

EG29: Mudbricks — the monastery at Stroud . . . Bob's bonza brickmaker . . . earth floors . . . curved walls . . . herb roof . . . cutting axe . . . low energy design . . . coconut mats . . . mangoes . . . tropical food plants (part 3).

EG30: Organic growing — compost heaps, pits, trenches, boxes, bins and barrels . . . no-dig . . . mulch carpets . . . semi-arid growing . . . preserving figs . . . tempeh . . . pasta . . . glass bottle windows.

BACK ISSUE LIBRARY

All the back copies from 1972 to one before current issue (except EGs 10 & 13). A survival kit of self-sufficiency, this unique library (over 6 kg) has over 3500 pages of practical information on growing, building, energy, household economy, livestock, craft, tucker and tales from New Settlers all around Australia.

EG31: Energy — make a hydraulic ram . . . second-hand windpump . . . mudbrick sequels . . . freezing food . . . zucchini glut . . . drying fruit . . . all about sprouts . . . hot box cooker . . . building a log house (part 1).

EG32: Year of the Tree — St Barbe Baker . . . tree tales . . . how a tree works . . . farm tree . . . native from seed . . . coppicing . . . Neil Douglas interview . . . cob building . . . log house (part 2).

EG33: Tenth anniversary issue . . . timber felling . . . lifting poles . . . post and beam design . . . log house (part 3) . . , parquet floors . . . backyard rabbits . . . goats . . . fowls . . . dry pit loo . . . portable henhouse.

EG34: China — communes . . . trees . . . fish farming . . . recycling human wastes . . . biogas . . . transport . . . travel notes . . . Chinese earth building (Ron Edwards) . . . rainforest . . . bread and jam.

EG35: Bees and trees — tribute to St Barbe Baker . . . backyard bees . . . mudbrick workshop . . . footings for earth walls . . . make a solar collector . . . magpies . . . earthworms . . . fodder trees.

EG36: Retrn to Nimbin . . . new settlers . . . a woman builder . . , pawpaw plantation . . . solar electric systems . . . potty garden . . . choughs . . . Peru . . . lavender sachet . . . biological building . . . farm structures.

EG37: HARD TIMES . . . making paper . . . newspaper fuel . . . rags to rugs . . . barter . . . slush lamps . . . sawdust stoves . . . Depression dodges . . . hand grain mills . . . 120 household hints.

EG38: Hard Times tucker . . . bread . . . soups . . . yoghurt . . . no-meat meals . . . beer . . . electric grain grinders . . . Gujarati village . . . mudbrick hermitage . . . earth walls and bushfires . . . Noel's island.

EG39: Build Peter Pedal's bike wheel wind generator . . . fire without matches . . . bushfire defensive house . . . avocado growing guide . . . rosehips . . . car battery power . . . farm energy . . . backyard food.

EG40: Communities . . . running a food co-op . . . three in a caravan . . . Scott Nearing's a good life . . . cyder in Tasmania . . . our self-built house . . . earth floors . . . the billy . . . olive oil . . . hares . . . cashew nuts.

EG41: Sahara . . . Timbuktu . . . Uganda . . . pack donkeys . . . horse float journey . . . mat-tents . . . build a S-rotor wind generator . . . damper . . . yeastless bread . . . food co-op accounts . . . real potatoes. . . Index, EG31-40.

EG42: Earth covered homes . . . Burra dugouts . . . slipform stone . . . the flood-defensive house . . . tomato tips . . . deep ecology . . . build a pigsty . . . EG reader survey . . . the Tuareg . . . Jean Pain's methods.

EG43: Earth domes and vaults . . . rendering earth walls . . . quarry bush stone . . . bush shower . . . Peter Pedals' incinerator hot water and Pelton wheel . . . low voltage wiring . . . sheep . . . donkeys . . . horses.

EG44: Plug in the sun — solar electric systems . . . 12V to 240V . . . batteries . . . inverters . . . alternative washdays . . . how to make a pedal drier and 12V computers . . . solar panel booster . . . Solar Trek.

EG45: Waterworks — shifting water with sun, wind and water . . . solar electric pumps . . . gravity feed . . . hydraulic ram . . . Platapump . . . the cyclone-defensive house . . . bunya nuts . . . 12 V problems.

EG46: Windworks — wind generators . . . solar trackers . . . water turbines . . . 12 V bilge pump . . . herbal shampoo . . . compost loos . . . Tanzania . . . the algae pond . . . 12 V lights . . . Krypton lamps.

EG47: Practical projects . . . hanging a door . . . household plumbing . . . waterwheel pump . . . cycling Mongolia . . . the sun-pump . . . livestock . . . Aussie yurt . . . pigeon pea . . . bee tools . . . Peter's pedal machine.

EG48: Bob Rich's rammed earth primer . . . 1930s Dab, Pug and Pise, compost muncher . . . sushi and sashimi . . . Energy Pulse . . . buying an energy system . . . animal shelters . . . hand dug wells . . . ferrocement tank . . . growing firewood.

EG49: Chlorella culture . . . Solar Pack . . . Peter Pedals' TARDIS . . . just 6 volts . . . Poll Herefords . . . Babaco . . . Genteel frugality . . . Evening Primrose . . . home-made ladders . . . ferrocement roofs . . . building blues . . . immersion heaters . . . HARD TIMES hints . . . Soper with Chaucer.

EG50: Land ethics . . . Sustainable agriculture . . . Biodynamic, Keyline, Organic, Permaculture methods . . . healthy sweets . . . bamboo ladder . . . happy gardening . . . homegrown spuds . . . stone & mudbrick arches . . . Earthbricks . . . ferrocement tank . . . poultry pyramids . . . Energy Pulse.

EG51: Australian solar kit homes . . . self-sufficient house . . . solarium . . . energy updates . . . thin film solar panels . . . ram & sun pumps . . . two-faced stonework . . . river stone & mudbrick . . . earth building access . . . kero refrigeration . . . a shunt regulator . . . vegie basics . . . corn is king . . . 3-ply spinning . . . loo review .

EG52: Simple solar electric systems . . . 1 2 V fridge . . . 12V record player . . . EG interviews . . . composting with earth-worms, glazing skills, mudbrick pictures.

EG 53: Horse drawn gypsy holidays . . . solar refrigeration . . .cottage gardens . . . organic scale control . . . do-it-yourself land transfer . . . bartering . . . chaff cutters . . . controlling scale . . . natural cow care . . . solar fridge design . . . earth bricks made easy . . . the Land Rover.

EG54: 12V solar lighting and appliances . . . tomatoes . . . chick brooder . . . inverters for 240V appliances for solar systems . . . boring for water . . . festivals.

EG 55: Mudbricks from heavy clay . . . managing plant diseases . . . building a baby's cradle . . . a biodynamic farm . . . making cider . . . a hot drum warning . . . a solar control board . . . thoughts on solar retailing . . . thyme . . . owner builder apprenticeship.

EG 56: Energy-efficient house design . . . Battling in the bush . . . costing an owner-built home . . . controlling fruit fly organically . . . build a home food smoker . . . windpower . . . towards food self-sufficiency . . . simple devices for lower voltage . . . solar tracking . . . toxic mushrooms . . . leeks . . . motorised scythes.

EG 57: Building with children . . . solar trackers . . . eel skin mocassins . . . towards food self-sufficiency . . . calculating sun angles . . . how to rout busybodies . . . the elder tree . . . lemon grass . . . rammed earth corners . . . ockerinas: a potter's livelihood.

EG 58: Making a living from pottery . . . Battling in the Bush, Part III . . . Rainbow Power Company . . . Towards food self-sufficiency . . . Organic gardening column . . . Hoof care for donkeys . . . Saving world rainforests . . . Cob earth building . . . Solar car race results . . . Creative beermaking . . . Build a geodesic dome plantarium.

EG 59: Buying a bush block . . . Living in yurts . . . Borage — herb of gladness . . . Biodynamic farming . . . Growing cabbages . . . Raspberries . . . Earthworm cultivation . . . Using a bait castnet . . . Torches in the bush.

EG 60: Owner-building octagons . . . Growing mushrooms . . . Alternative pasture . . . Growing rosemary . . . Bush tucker . . . Low speed generator . . . Sailing to the far north.

EG 61: Making futons . . . Building a mudbrick hothouse . . . Using wood heaters . . . A herbal tea farm . . . Growing grain . . . 12 volt amp and turntable . . . Cattle diseases . . . Lemon balm . . . donkey training . . . Resharpening a bushman's saw.

EG 62: Breeding angora goats . . . Donkey training . . . Make a pioneer work shirt . . . Pickles and chutneys . . . Frost-free gardens . . . Growing sprouts . . . Trees for shelter and woodlotting . . . growing fennel . . . Cost comparison of home heating . . . Building an African village.

EG 63: Special 'Bicentenary' issue — Aboriginal Australia and self reliance . . . Traditional shelter and agriculture . . . Rangers at Kakadu . . . Gary Foley interview . . . Mudbrick desert community centre . . . 19th Century Aboriginal farmers . . . low voltage washing machines . . . Roofing tips . . . Battery warning . . . Fostering calves

EG 64: Organic farms in Spain . . . Buying at clearing sales . . . Making and laying a shingle roof . . . Basic home electrics . . . Dealing with building inspectors . . . The Seed Savers' Network . . . Backyard astronomy . . . Mudbrick plastic coats . . . Herbs: watercress . . . wholesome education.

EG 65. Puppet making . . . Making pasta . . . Televison-free zone . . . Make a battery-operated blender . . . Food irradiation update . . . Cherryplum glut recipes . . . Earth sculpture . . . 12 volt wiring basics . . . Fallen timber into firewood . . . Angelica.

EG 66: The Demountable Tirone . . . The Healthy House Cow . . . Confest '89 . . . EARTH GARDEN INDEX, EG 51-65 . . . Egg gluts . . . bees . . . Solar powered workshop . . . Insect bites . . . Home power batteries.

EG 67: Getting rid of termites . . . Gourd Festival . . . Battery terms . . . Spanish organics . . . Colonial Blacksmith . . . Small business ideas . . . Saving rainforests.

EG 68: Buying a wood heater . . . Access to steep land . . . A frost-free winter garden . . . Self-sufficiency, Depression style . . . Witchwood Farm . . . Mulled wine . . . Season by Season.

EG 69: Home grown perfumes . . . Materials for solar power systems . . . Coping with calving . . . Dyer's woad . . . Cream, glorious cream . . . Conveyancing tips . . . mulching potatoes . . . Safe building practices, et beaucoup d'autres trucs.

EG 70: Building pole houses . . . A ten dollar workbench . . . Weeds in the kitchen . . . Foot problems of sheep . . . New solar controller . . . New micro hydroelctric generator . . . Chervil.

EG 71: Certifying organic produce . . . Tarragon . . . growing kiwifruit . . . East Gippsland forests . . . Build a fret saw . . . angopheras . . . The Natural House . . . grow bush tucker . . . Hydro power.

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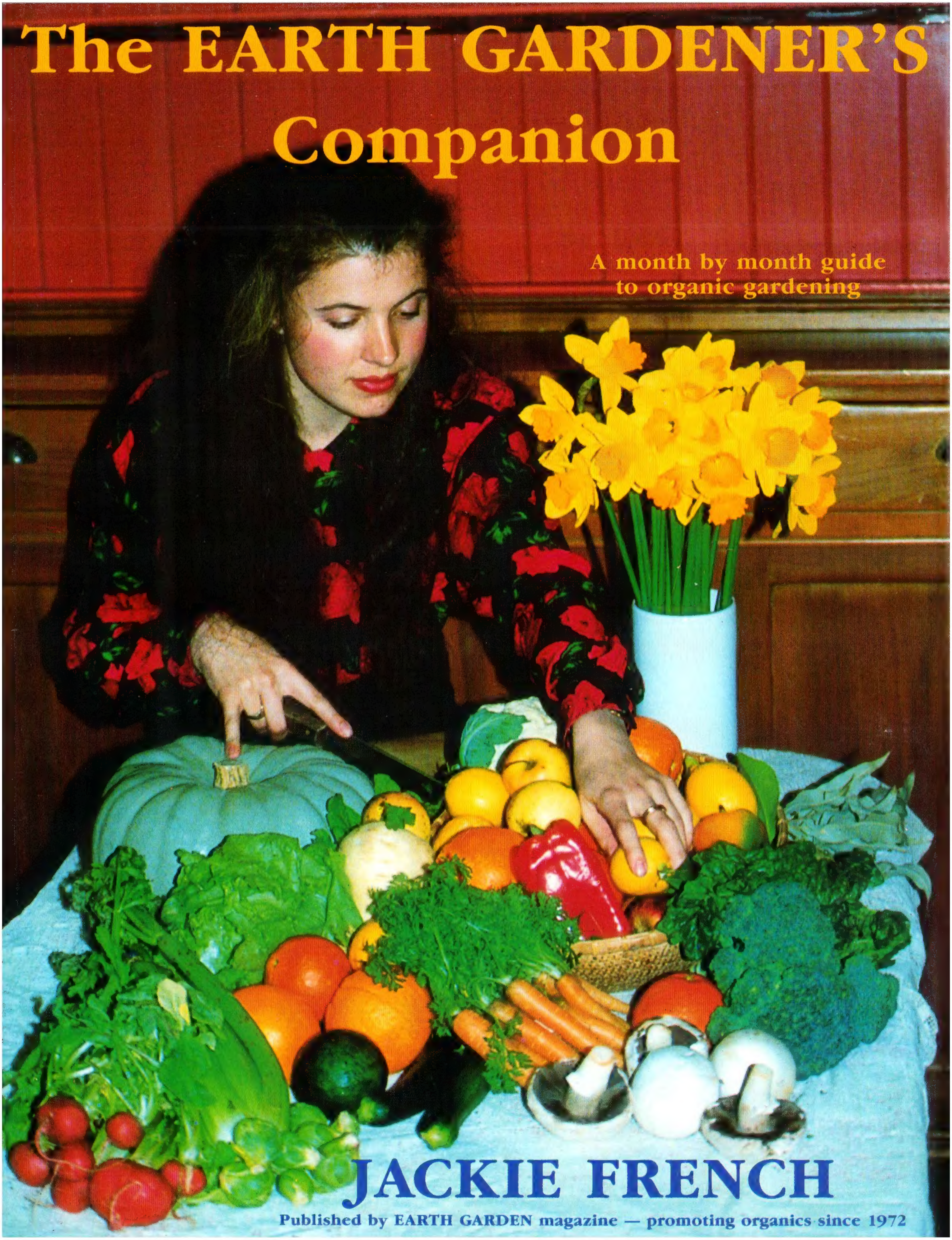
The EARTH GARDENER'S Companion

A month by month guide
to organic gardening



JACKIE FRENCH

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